The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 23. NO. 47 TULSA, OKLAHOMA, APRIL 16, 1925

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Crude Market Firm Despite Increase

Average daily production in United States week ended April 11, 2,011,315 bbls. Gain from previous week, 51,751 bbls.

Standard's Offer to Buy Gasoline Important Factor, at Least Temporarily. California's Shipments Decreasing

By Andrew M. Rowley

Highest daily average estimated production this year, week ended April 11, 2,011,315 bbls. Lowest January 3, 1,911,730 bbls.

Despite the fact production of crude petroleum last week showed the second greatest increase registered during this year, gaining an average of 51,751 barrels daily, the general situation affecting both the crude and refined oil markets appeared stronger on Tuesday of this week than it had during any period of the week previous. The better feeling was due largely to the offer of the Standard Oil Company of New Jersey to purchase 2,000 cars of export gasoline from Mid-Continent refiners during this month; to the fact consumption of both crude oil and refined products is showing very material increases; to the fact it now appears as if California will not be able to send as much oil around to the Atlantic Coast as had been expected; and because the increase in production resulted largely from the Smackover heavy oil field whose output would have but very little effect upon the crude oil price structure which is controlled to a very great extent upon the production and demand for light gravity, or gasoline content, crude.

There is no doubt if the refiners in the Mid-Continent accept the offer of the Standard Oil Company of New Jersey and sell that concern the 16,000,000 gallons of gasoline, the price structure of both the refined and crude oil markets will be strengthened, at least temporarily. A weak refined oil market naturally is reflected upon the crude oil situation and any amount of distress gasoline on the market must inevitably result in lower prices for that product with consequent lower crude oil prices.

The output of the recently discovered deeper sand in the Smackover Field in Arkansas is showing a phenomenal increase. While its estimated average daily production last week was 76,000 barrels, at the beginning of this week its output was placed at 145,000 barrels a day with a potential production of easily 200,000 barrels daily from the wells already producing, a number of which are pinched in. A feature of the situation at Smackover last week was the fact the pipe lines shipped considerably more of the oil from that field. However, the fact remains this crude is suited chiefly for fuel oil and the big production has not as yet been considered as a menace to the main crude oil price structure. The reduction of 20 cents a barrel in Smackover heavy crude, announced on Tuesday of this week, had been expected for some time. In fact, operators in that area expected a greater reduction. For the same reason the reduction of 25 cents a barrel in price of Gulf Coast crude announced on Monday of this week was considered as due to the fact this crude is of value chiefly for cold test lubricating oils and the demand for that class of product is seasonable and over now until next fall.

Of considerable importance to the general situation also is the matter of receipts of crude and refined oils from California at Atlantic ports. These shipments are decreasing and it is understood they may cease to be a factor within the next few weeks. It is said California feels it needs the oil it is producing and refining and there will no longer be the excess which heretofore has been sent around to the Eastern seaboard to take the place of crude and refined oils which formerly came from the Mid-Continent.

The basic facts affecting the petroleum situation at this time are sound. The production of light gravity crude has shown a very great decrease during recent weeks. No big new pool is in sight. New production is being developed in a number of sections throughout the country but the total output of these new fields is still small and will not amount to enough to have any great effect upon the general situation. The production of the Garber, Oklahoma, deep sand area and other places where deeper drilling is expected to result in increased output will not affect the market for a long time because of the time required to drill a well and the cost of such an undertaking.

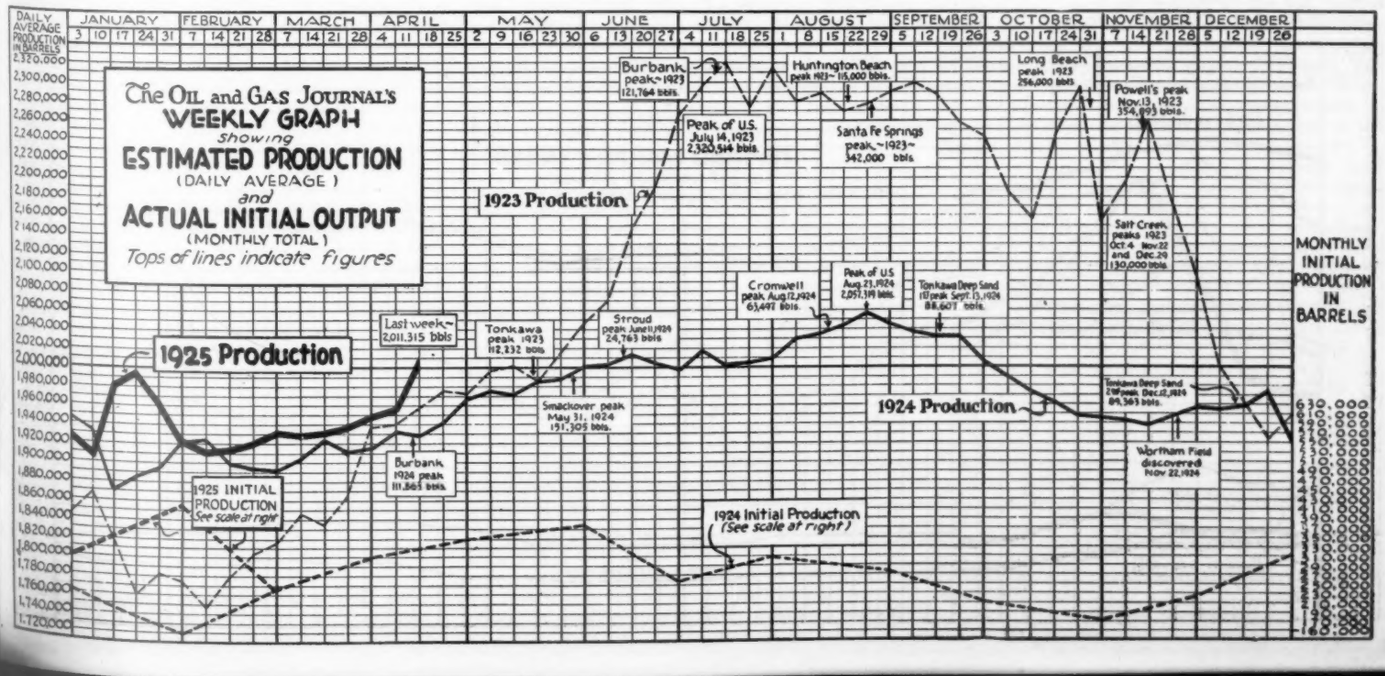
It must be remembered the industry soon will enter upon the period of maximum demand. The larger oil companies for some time have been drawing crude from storage. At the present time runs and shipments of the larger companies are becoming more balanced. But if the producers and refiners "sit tight in the boat," are able to keep distress products off the market, and consider more the basic facts of the situation and less of stock market fluctuations, there is no reason for anything but optimism regarding the future.

PRODUCTION IN THE UNITED STATES

Estimated daily average crude oil production in the United States for the week ended April 11, and a comparison with the previous week follows:

	April 11	April 4
Oklahoma—Northern Fields:		
Tonkawa	72,685	75,790
Burbank	60,970	59,345
Other Osage Fields	34,455	34,655
Cushing and Shamrock	22,025	22,085
Bristow and Eastern Bristow	33,865	33,905
Cromwell	44,670	36,740
Papoose	24,875	26,335
Northern Miscellaneous	108,520	103,415
Southern Fields	62,875	63,150
Total Oklahoma	464,940	455,420
North Louisiana	50,360	51,334
Arkansas—		
El Dorado and Calion	9,430	9,305
Smackover Light	31,225	31,970
Smackover Heavy	128,795	86,750
Stephens and Nevada	3,540	3,400
Total Arkansas	172,990	131,425
North Central Texas	147,515	146,970
Powell	53,400	53,200
Mexia, Currie, Richland, etc.	28,720	28,900
Wortham	62,700	67,300
Kansas	85,795	85,395
Total Mid-Continent Area	1,066,420	1,019,944
Gulf Coast	101,840	106,090
Suothwest Texas	45,110	42,900
Eastern	103,475	103,050
Rocky Mountain Area	94,470	91,080
California		
Santa Fe Springs	49,000	48,000
Long Beach	114,000	115,000
Huntington Beach	42,000	42,000
Torrance	39,000	38,500
Dominguez	48,000	47,000
Remainder of State	308,000	306,000
Total California	600,000	596,500
Total United States	2,011,315	1,959,564

Increase, 51,751 Barrels


The Oil and Gas Journal's
WEEKLY GRAPH
showing
ESTIMATED PRODUCTION
(DAILY AVERAGE)
and
ACTUAL INITIAL OUTPUT
(MONTHLY TOTAL)
Tops of lines indicate figures
DAILY AVERAGE PRODUCTION IN BARRELS
JANUARY
FEBRUARY
MARCH
APRIL
MAY
JUNE
JULY
AUGUST
SEPTEMBER
OCTOBER
NOVEMBER
DECEMBER
1925 Production
1924 Production
1923 Production
1925 INITIAL PRODUCTION See scale at right
1924 Initial Production (See scale at right)
Last week~ 2,011,315 bbls
Burbank peak~1923 121,764 bbls.
Peak of U.S. July 14, 1923 2,320,514 bbls.
Huntington Beach peak 1923~ 115,000 bbls.
Santa Fe Springs peak~1923~ 342,000 bbls.
Long Beach peak 1923 256,000 bbls.
Powell's peak Nov. 13, 1923 354,693 bbls.
Salt Creek peaks 1923 Oct. 4 Nov. 22 and Dec. 29 130,000 bbls.
Tonkawa peak 1923 112,332 bbls.
Stroud peak June 11, 1926 24,763 bbls
Smackover peak May 31, 1924 151,305 bbls.
Cromwell peak Aug. 12, 1924 63,497 bbls.
Peak of U.S. Aug. 23, 1924 2,951,349 bbls.
Tonkawa Deep Sand (2nd peak Sept. 13, 1924 88,607 bbls.
Burbank 1926 peak 111,865 bbls.
Tonkawa Deep Sand (3rd peak Dec. 12, 1924 69,363 bbls.
Wortham Field discovered Nov. 22, 1924
MONTHLY INITIAL PRODUCTION IN BARRELS

Expected Export Buying Aids Market

Proposal of Standard of New Jersey to Buy 2,000 Cars of 58-60 U. S. Motor Gasoline Stiffens Market. Domestic Demand Better.

By C. O. Willson

The entry of the Standard Oil Co. of New Jersey into the Mid-Continent refinery market for the purchase of 2,000 cars of export 58-60 U. S. Motor gasoline on Tuesday overshadowed all other developments in the Oklahoma (Group 3) refined market. Options were being taken on Tuesday from Oklahoma, Kansas and North Central Texas refiners for the purchase which, if consummated, will be the largest single order ever placed for gasoline in the Mid-Continent Field for prompt delivery.

Before the company exercises its option it will be necessary for refiners to agree to sell the full 2,000 cars at a reported price of 9¾ cents, basis Oklahoma (Group 3) for delivery in 30 days. Reports late Tuesday indicated that the refiners would be willing to dispose of the desired amount although it will probably take a day or two before it will be definitely known just what the results of the transaction will be.

The offer of the New Jersey company is obviously an effort on its part to relieve the independent refiners of excess gasoline with the hope that it will permanently aid the refinery market and prevent a further collapse which recently has threatened crude as well as refined markets.

The proposed purchase resembles that placed by the New Jersey company last year on May 13, except that the company now offers to buy 16,000,000 gallons or 60 per cent more than the 10,000,000 purchased last year. The purchase last year checked a declining market which held firm two weeks before again starting to decline. It is believed the purchase this year will prove of greater benefit than last year due both to the fact more gasoline will be bought and also because the statistical position of the smaller refiners with whom the bulk of the order will be placed, is better than last year.

The immediate effect of the purchase on Tuesday in Oklahoma was to strengthen the gasoline market, including natural gasolines. The U. S. Motor 58-60 grade was firm at 9¾ to 10 cents with indications that prices would advance the latter part of the week provided the New Jersey purchase is consummated. All grades of refinery gasoline and natural gasoline will also probably advance.

Before the New Jersey purchase became known on Tuesday the present week opened with a better market tone apparent in several products in Oklahoma. Prices up to Tuesday had not materially changed from the low levels reached the latter half of last week but many sellers were hopeful that conditions pointed to at least firm markets for several days in all products with the possible exception of fuel oils.

Spot fuel oil prices have been firm for several days and the expectation of lower prices over the last half of April and May is based on the large flush crude production of the Smackover Field in Arkansas. This production of low gravity crude of value primarily as fuel oil has rapidly increased during the past week and the total daily production the first part of this week was 175,000 barrels with the peak yet to be reached. Full details of developments in the field whose deep sand production is the most important factor in the crude market at this time, will be found elsewhere in this issue. Although the bulk of this new flush production is going to storage or is being handled by large purchasers for Gulf Coast delivery, it is believed sufficient quantities will be available for inland consumers to constitute a menace to the Mid-Continent market.

Warm weather, increased sales and prospects for still greater demand the latter half of April as well as the New Jersey purchase were responsible for the better tone in the gasoline market.

Practically everyone of the Oklahoma trade who attended the spring conference of the National Petroleum Marketers Association last week in Chicago returned with the report that jobbers' stocks of gasoline are low for this season of the year. With few exceptions jobbers reported a large increase in gallonage over last year but they were pursuing a "hand to mouth" buying policy due to the slump in the refined market which has alread forced reductions in tank wagon schedules in some areas and which they feared will bring more general reductions in the near future.

On the opening day of the National Petroleum Marketers Association convention last week the Standard of New Jersey reduction was announced and this led to the general feeling among the jobbers present that before they could return to their homes reductions would also be announced by the major marketers in their territory. When no reductions were announced a better feeling was apparent even before the conference closed on Thursday. At the conference there was some agitation in the business sessions to bring about a reduction in tank wagon prices through the action of the independent jobbers.

Upswing Hoped For

The thought back of this proposed action was that in several sections of the country there were too wide spreads between the refinery and tank wagon prices to maintain a healthy condition in the wholesale and retail markets. Away from the business sessions many jobbers expressed themselves in favor of waiting for a few weeks at least before they reduced their prices. This sentiment was reflected this week in a bulletin from the association which advised waiting two or three weeks before reducing the tank wagon prices. The bulletin said that "a very earnest and sincere group feel that the present low spot market price is entirely the result of a misunderstanding within the industry of our true statistical position. They contend that within ten days markets will stiffen and that the swing upward will place spot offerings on a proper level with the present tank wagon and filling station price structure." It is understood that the position outlined in this bulletin is also representative of the position taken by the Standard Oil Company of Indiana. The action of the New Jersey company supports this view.

(Continued on Page 114)

REFINED MARKET BAROMETER

A decidedly mixed situation obtained in refined markets throughout the United States during the past week. Additional tank wagon and crude reductions at scattered points were reflected in weaker refined markets for the areas affected but in other areas improvement was noted in some products. The outstanding development in the Mid-Continent and Central West areas was the proposal of the Standard of New Jersey to purchase 16,000,000 gallons of U. S. Motor gasoline for export. This purchase, if carried out, will probably bring higher motor fuel prices in the Mid-Continent and aid the entire market structure east of the Rocky Mountains. The domestic kerosene demand was generally strong during the week, bringing slight advances in prices in some areas. Fuel oils were fairly firm at interior points but soft in the coast areas. Prices on lubs were reduced 1 cent in Gulf Coast following crude reduction. No changes in lubricants in other areas. There were more inquiries for wax during the week.

Mid-Continent—The proposed purchase of 16,000,000 gallons of U. S. Motor gasoline for 30-day delivery by Standard of New Jersey strengthened gasoline market, including natural gasolines, in all areas. Fair demand for kerosene with prices firm. Fuel oil prices fairly firm. No change in lubricants.

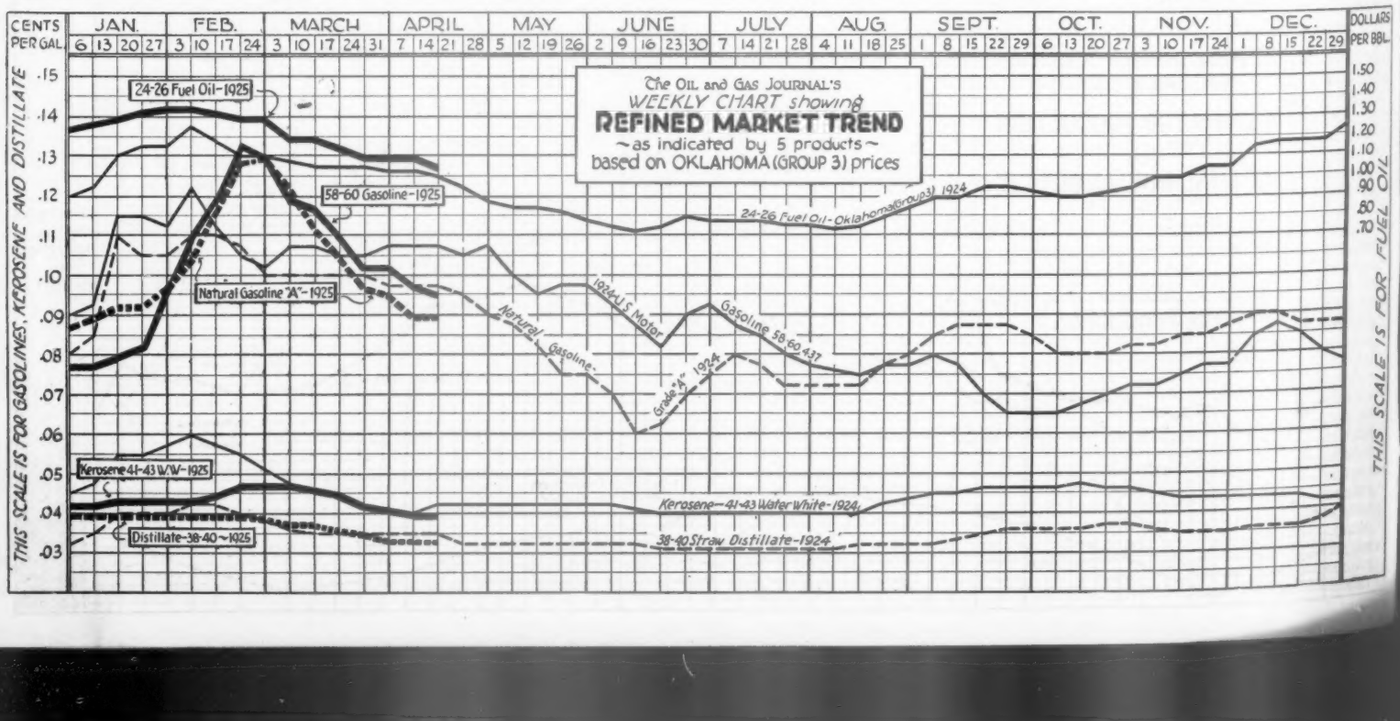
Atlantic Seaboard—Gasolines weak. Fuel oil soft. Lubricants weak. Fair export demand for bulk gasoline and kerosene.

Gulf Coast—Prices on all grades of lubricants reduced 1 cent following crude reduction.

Pennsylvania—Favorable weather brought better feeling into gasoline trade. Kerosene considerably stronger with a number of fair-sized sales for rush delivery reported as result of increased demand of the tractor trade. Neutals very weak with cylinder stocks lower. Wax soft but bottom in price believed reached. Fuel oil continues soft.

California—Market decidedly dull, with offerings becoming more plentiful in all commodities, especially gasoline. Kerosene soft. Lub market featureless. Fuel oil holding own.

Chicago—Gasoline market firmer. Kerosene quiet. Gas oil little changed. Fuel oil firm due to slow movement rather than increased demand.


CENTS PER GAL
JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC.
DOLLARS PER BBL.
THE OIL AND GAS JOURNAL'S WEEKLY CHART showing REFINED MARKET TREND ~as indicated by 5 products~ based on OKLAHOMA (GROUP 3) prices
24-26 Fuel Oil-1925
58-60 Gasoline-1925
Natural Gasoline "A"-1925
Kerosene 41-43 W.W.-1925
Distillate-38-40-1925
24-26 Fuel Oil-Oklahoma(Group3) 1924
1924 U.S. Motor Gasoline 58-60 A.G.T.
Natural Gasoline-Grade "A" 1924
Kerosene-41-43 Water White-1924
38-40 Straw Distillate-1924
THIS SCALE IS FOR GASOLINES, KEROSENE AND DISTILLATE
THIS SCALE IS FOR FUEL OIL

Oklahoma Oil Bearing Sands Correlated

Accurate Knowledge of Different Producing Horizons of Vast Importance and Vital Factor in Conservation

By C. D. Lockwood

The identification and correlation of oil bearing sands is a study of vital importance to the entire industry and has a direct value in dollars and cents. It is a primary step in conservation, which engrosses the attention of our Government and oil men alike at this time. The fact that the Hominy sand has a rather abrupt water line while the appearance of water in the main Wilcox sand is very gradual; that the Misener sand does not produce on structure while the main Wilcox produces almost exclusively on well defind structures and the Hominy sand often produces its best wells part way down the side of the fold; that the Prue or Squirrel sand usually produces only on the side of a structure; that the Dutcher sand yields large initial wells but has an abrupt decline while the Bartlesville or Glenn sand wells usually decline very slowly—these facts and many others of a similar nature make it of real economic importance for a producer to know from what sand his well is producing. The present controversy over the correlation of the new deep sand at Garber, and the present wrangle over the deep Tonkawa pay, both of which are considered by a majority of geologists to be the Wilcox horizon, reveal the need of research on this subject.

Whenever a new field is opened, or a deeper horizon uncovered by a courageous pioneer, local enthusiasts who have a natural bent for christening everything from babies to flivvers, immediately set about to give the new member of the sand family a name, and in the central part of Oklahoma, if the evidence is positively too strong to call it the Bartlesville or the Wilcox, depending upon the depth, the christening committee, with a fine spirit of gratitude, honors the adventurous producer who discovered it.

In the early boom days of the Cromwell Field last year, Joe Cromwell himself, along with many others, was confident that his oil was coming from the Bartlesville sand and when that theory became evidently untenable, the name Cromwell sand was applied by common consent although geologists were almost unanimously agreed that it was the Lyons sand before the majority of drillers and lease men quit calling it the Bartlesville.

The Humorist Steps in

Humorous instances of this nature are common. Around Muskogee, in days gone by, the drillers had what they called the "Irish" or "Shamrock" sand, so called because of some green shale that was in it. Up in Kansas, the log of a well drilled on the east side of the Granite Ridge, in Butler County, showed a lot of black slate and shale which the driller said was the blackest stuff he had ever seen. Being unable to account for it in its position, he labeled it "Dark Ages." The "Farmer's" sand is a well known horizon, but is usually dry, or too deep to reach with present drilling equipment. One prominent geologist of a large company in Tulsa is original, and when he encounters a sand that he cannot correlate with any other established horizon, he calls it either the "King Tut" or the "Ku Klux."

Another familiar one is the "Suitcase sand," so called because it is so hard that the driller gives up in disgust, grabs his suitcase, and departs for points unknown.

It may be a blow to local pride in many places, therefore, to know that in the area shown on the accompanying map—that part of Central Oklahoma lying north of Township 1—not a single new producing horizon of any present importance has been discovered within the past 7 or 8 years, and that all of the sands which are of wide distribution and industrial significance can be included in about a dozen names. Of course, there have been numerous so-called "stray" sands encountered in various parts of this region, productive in a local area, and generally in only a few wells. But the new pools which have seriously affected the industry within those years have all produced from horizons which have long played an important part in Oklahoma's petroleum history.

The Hunton Lime

The single exception to the above general statement is the Hunton lime, which some geologists may insist upon classifying as of present importance. It was discovered at Beebe in Section 4-4n-5e, Pontotoc County, in October of 1921 and again found in December of the same year at Maud, three townships north of Beebe in eastern Pottawatomie County. Some geologists who have done detailed work on the Hunton formation since then are of the opinion that some other wells in that part of the country, such as the deep tests at Wewoka and Buckner, both in Township 8-8, have had oil showings in the Hunton, and are strongly convinced that some pools of major importance will be opened up in that horizon in the future. However, due to the fact that the Beebe and Maud wells were only 100-bbl. producers, and that the presence of commercial oil in the Hunton has not been definitely established in other regions, its importance as an oil reservoir is problematical, although worthy of the intensive research that some large Mid-Continent concerns are devoting to it.

The statement that no new sands have been discovered within recent years may be disputed also by those who remember the excitement following the opening of the Turkey Mountain Pool about 5 miles south of Tulsa in May of 1922. A new sand was widely proclaimed and much deeper drilling in surrounding territory ensued with more or less negligible results. Geologists who have done a large amount of detailed subsurface work in this region since that time, however, have learned that the porous streaks in the siliceous lime, or Turkey Mountain sand, produced in wells south of Tulsa years before it was penetrated in the dome from which it derived its name. Drillers simply didn't know at the time that they were in it. Luther White, chief geologist of the J. A. Hull Co., still has a reward out for a sample of Turkey Mountain "sand."

The history of the famous Wilcox sand series, as most geologists have come to call the horizons below the Mississippi lime, is more familiar to the average oil man, and there are probably few who do not know that it was discovered in southern Tulsa County, near Bixby, as early as 1914. Almost simultaneously, a 13-bbl. an hour well was brought in north of Tulsa in the Osage, and was then known to be producing from a formation below the Mississippi lime. Some old time drillers claim that a small oil well was completed in the "second break" as early as 1907, but the records have been lost or misplaced.

A Non-Technical Explanation

The writer makes no claim that the highly complicated and technical difficulties arising from an attempt to correlate the sands of Central Oklahoma over wide stretches of territory can be dismissed with a few words. Any one who has talked to a few geologists about the problem knows better than that. Geologists who have a vast amount of data on the subject are still in disagreement over some interpretations in different areas, and with the limited amount of information now available, it is impossible for anyone to say definitely what the solution is in some places. The trained specialists of one large concern with acreage in the heart of the Cromwell Field believe that the deep oil showing in the Shaffer well there is in the Wilcox sand. Another company's subsurface experts believe it to be Hunton or something else. The Dixie Oil Co. geologists classify the Skyes sand at Wewoka as the Lyons, while others differ, believing the Sykes to be a part of the Upper Dutcher or Deaner series and that the Lyons is lower. And so on.

Still, the layman—the producer, field man and the every day oil man who is interested in Oklahoma fields but who has not had geological training—has long been in need of a simple non-technical explanation of some facts about which geologists have long been in virtual agreement. Endless confusion aising fom the multiplicity of local names given to sands in newly discovered pools can be avoided by the application of a little common sense and without the use of a long string of technical words which are necessary for the geologist in explaining his position to his brothers in the profession but which are meaningless to the man without his foundation in specialized knowledge.

Spread of Oklahoma Formations

Volumes of explanation and conjecture have been published by the United States Geological Survey, the Bureau of Mines and by independent geologists on the peculiarities, uncertainties and unconformities of a particular sand in a single field, so it must be borne in mind that broad, sweeping statements that will bear close scrunity are difficult to make. A close study of hundreds of individual well logs from the Kansas line down to the Arbuckle Mountains has convinced geologists, however, that the formations spread out in the fan-shaped manner shown in the generalized sketch on the accompanying insert. This spread is so pronounced that two formations which are 1,750 feet apart at Pawhuska are about 4,000 feet apart in the country north of Ada.

This spreading or thickening of the formations has been the basis for a large part of the confusion in naming the sands. When an oil sand was discovered at Morris years ago at about the Bartlesville or Glenn sand depth, it was called Glenn but was later found to be the Dutcher while a gas sand above it proved to be the real Glenn sand. On the map, the names "Glenn" and "Bartlesville" have been used interchangeably.

Another mistake made in a similar way is still bothering many oil men, even including a number of geologists, although it has been recognized for years. It is the old difficulty of "Peru" and "Prue." The easiest known way to get an argument started is to ask which should be called "Peru," the formation known by that name in the northern Osage and southern Kansas, or the "Peru" of Creek County. Obviously, both cannot be called by the same name for one is above the Oswego lime and the other below it, and the Oswego is the best marker known to driller and geologist alike throughout this whole region. The generalized sketch illustrates the relative position of the two sands, and several authorities are adopting the name of "Squirrel" for the Prue, or the Peru of Creek County, in order to get away from the confusion caused by the close similarity of the names.

Some geologists believe that the Skinner sand and the Prue or Squirrel are members of the same formation, while others believe that the Prue is too high for that to be the case. As noted on the map, the Red Fork and Skinner are also thought by some to be equivalent. This, however, is a relatively unimportant question.

Confusing the Limestones

Another confusing name in Central Oklahoma is the Big lime. This name has been applied to the Mississippi lime in some places where the Big lime (as known originally by geologists) is absent. The formation which first had this name, and to which it rightfully belongs, is the one in the position shown on the generalized sketch.

The Mississippi lime is still another name applied loosely. To some persons, there is nothing between the top of the Mississippi lime and the granite except the Mississippi lime and breaks in it. As a matter of fact, the term should apply only to the heavy lime body itself which is roughly 300 feet thick.

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Closed Car Swelling Gasoline Demand

Throughout the Year Use of Motors Increasing Consumption, Eliminating Seasonal Slackness and Helping Oil Industry Stabilize Markets.

By C. O. Willson

Leading economists in recent years have often times contended that the rapid fluctuations in markets and consequent ills in the oil industry have been largely due to the fact that the demand for gasoline has been too seasonal. Stabilization in the sense that it exists in many other industries has never been possible in the past and will not in the future, they claim, so long as the industry must depend on a few months of the year in which to dispose of the bulk of their main product.

There is a seasonal variance in consumption for many of the more important commodities but there is little doubt that this wide difference in gasoline consumption during the winter and summer months has worked a special hardship on the oil industry. Unlike all the other socalled basic industries it is not possible to control the supply of raw material in the oil business. Producing wells cannot be shut down in the winter or their production curtailed without a loss in output which cannot later be regained. This is an inherent situation in crude oil production which means that seasonal control of settled output is impossible.

Gasoline Demand

In the manufacturing end the oil industry's position is also especially difficult. Refiners must take the crude supplied by the producers often times in regular shipments which vary little if any from month to month. The distillation processes require the operation of the plants 24 hours a day so it is impossible to operate part time. Outside of the regular crude supply labor conditions peculiar to the oil industry necessitate uniform plant operation throughout the year to avoid losses.

Finally, there is the demand for other products except gasoline which are secured from crude petroleum. The demand for fuel oil, kerosene anl several other products is not as seasonal as gasoline. However, it often happens that the maximum demand for these products comes at a time of the year when gasoline consumption is light and this uncontrollable situation adds to the difficulties of the oil business.

The industry has attempted to cope with this inherent situation in the past through the storage of crude and refined products. Both the producers and refiners, including the large purchasers, have stored their products during the dull periods of the year in expectations of the requirements of the maximum consuming season. Just how hazardous an undertaking this has been is known to everyone connected with the industry. Contrary to what reasonably could be expected, markets for either crude or refined products have been soft during the period of greatest consumption. In the crude and gasoline markets this condition has been especially noticeable during 1923 and 1924 and at the present time a duplication of these two unsatisfactory years threatens for 1925 due largely to the fact that refiners ran too much crude through their stills during the winter months.

Closed Car Stabilizer

With the producers of petroleum products hanicapped in their efforts to remedy this situation, it follows that any aid from the outside will be welcomed by the industry. Many careful observers believe this aid is to come from the consumers of gasoline due to the increased use of closed cars and other types of motor vehicles operated throughout the entire year.

In a general way everyone has known that the manufacture of closed cars has increased in recent years. Few outside the automobile industry have realized the tremendous strides that have been made. The following table issued by the National Automobile Chamber of Commerce clearly shows this trend:

Year	Pct. of Closed Cars	Year	Pct. of Closed Cars
1915	2.4	1920	16.0
1916	2.8	1921	21.0
1917	4.2	1922	26.8
1918	7.3	1923	33.6
1919	9.1	1924	38.7

Last year approximately 1,300,000 closed cars were built. This represented an increase of approximately 100,000 closed cars over the 1923 production despite the fact that the total production of all cars in 1924 was 374,000 less than in 1923.

Every Other Car Closed

Estimates as high as 50 per cent closed car production for 1925 are made in the automobile industry. A canvas made by an automobile publication among 46 manufacturers showed that without exception they expected to increase their 1924 closed production in 1925. Commenting on this situation the publication said in part: "The tremendous proportions of the trend toward closed cars is visualized rather strikingly by the fact that one make of car which only so far as 1919 had 9 per cent of its output closed expects practically to discontinue its open models in 1925. The big swing to closed models this year probably will establish a new standard of comparison in the industry. No longer can the five passenger open model be considered the standard for price comparison. Future compilations and comparisons probably will have to be made with the lowest priced five passenger closed job the yardstick."

The closed car has made the automobile an "all year" performer, where formerly it was "put up" for the winter, being raised on jacks, covered and stored until favorable weather in the spring. And even in more favored climes like Florida nearly all the cars are closed. Though the weather there is supposed to be nearly perfect, the wind is an important factor, and visitors are glad to use a closed car for that reason while touring. In California, the same conditions prevail. Though the weather be fair many a journey is not undertaken which would otherwise be scheduled, on account of the uncertainties of weather conditions. With the closed car such changes are not to be feared. All this means an increased consumption per motor, which of necessity has added and is adding continuously to the volume of the consumption of refined products. Old time users of open cars have been steadily through replacement coming over into the column of the closed machine. When reckoned in millions of machines the results are impressive.

Lower Price Class

Attention is also called to another table of special significance to the oil industry having to do with the percentage of closed cars by price classes:

Year	Under $1,000 Pct.	$1,000 to $2,000 Pct.	$2,000 to $3,000 Pct.	$3,000 and over Pct.
1922	23.8	38.8	78.8	77.1
1923	29.3	45.8	75.2	90.6
1924	31.8	70.7	76.9	90.0

The significant feature of this table lies in the percentage increase in closed models for the cheapest class of under $1,000 and the next class of from $1,000 to $2,000. This obviously means that the closed car production is rapidly increasing for cars under $2,000. Closed car production was of little importance when it was confined to the high priced cars which are relatively few in number and consume little of the total gasoline. It is significant then the closed production of Fords doubles within a period of 18 months and such medium priced cars as the Dodge expect to have a 60 per cent production of closed cars in 1925.

Buses and Trucks

Second in importance to the increased production of closed cars is the rapid increase in the number of buses, the largest per unit users of gasoline of all the motor vehicles. Accurate figures are not available but it was estimated that at the end of 1924 there were approximately 53,000 buses in use, of which 12,500 were built in 1924. The demand, according to all statisticians, is rapidly increasing. In this connection a statement issued by the executive committee of the American Electric Railway Association at its recent meeting is interesting. The association officially recognized that bus transportation is now of value as an "auxiliary or supplement to and in some instances substitute for electric lines." For the period starting in October, 1923, the number of buses used by electric railways increased 229 per cent and the miles of route 270 per cent. The number of railway companies using buses increased 70 per cent. These comparative data were compiled by the National Automobile Chamber of Commerce.

The production of trucks, also large users of gasoline, is also increasing. As previously explained, automobile production in 1924 was substantially less than in 1923 but the total of 375,396 trucks manufactured was only 861 less than the peak production of 1923.

What It Means

Little further explanation concerning the importance of the increased production of closed cars is necessary. The following extract appearing last month in a leading trade publication regarding the importance of closed cars to the automobile industry may soon be applied to the oil world: "Leading makers have taken the stand that this year will mark the passing of the socalled seasonal production that in past years has been the cause of unsettlement at regularly stated periods. The lower priced closed models of passenger cars has turned out not only to be a settled style but it also has served the purpose of providing a stabilizer for the

(Continued on Page 117)

"1925—THE YEAR OF THE CLOSED CAR"

This is the slogan of the automobile industry for this year.

There never was an action on the part of a closely allied industry which deserved greater support from the petroleum world, than the trend toward the closed "all year" car and away from the "seasonal" open car used only when favorable weather conditions prevail. Of importance in gasoline consumption it is second only to the good roads programs. Unlike the latter which the gasoline dispenser is supporting through gasoline taxes it costs the oil industry nothing.

Last year 38.7 per cent of the passenger cars were closed models. Five years before the closed cars represented less than 10 per cent of the total. It is estimated that closed car production will exceed 50 per cent this year. The percentage will rapidly increase in future years. There has also been a large increase in the production of buses and other cars in service 12 months of the year.

This trend in the manufacture of motor vehicles has already been felt in the oil industry. In this article the writer discusses the probable effect in the future based on data from both the oil and automobile industries.

Gasoline Makers Plan Big Convention

Comprehensive Program Covering Subjects of Vital Interest Has Been Prepared for Meeting Next Week.

By Neil Williams

With preparations completed for the fourth annual convention of the Association of Natural Gasoline Manufacturers to be held at the Mayo Hotel at Tulsa next Wednesday and Thursday, April 22 and 23, the natural gasoline makers now are looking forward to what they expect will be the best meeting since their organization was formed.

The convention is expected to be the best in history of the organization not only from the viewpoint of attendance but also in point of value and practicability to those who attend the sessions. While no definite information has been obtained by A. V. Bourque, secretary of the association, as to the number of persons to register, he is looking for nearly 1,000 visitors. Mr. Bourque bases his estimates on attendance at previous conventions. Each year has seen a great increase in the number present with 800 visitors being registered at the convention last year.

As price conditions will play no part on the program of the convention, the rapid decline in the gasoline market the last month and a half will have no tendency to keep the natural gasoline manufacturers from attending the sessions, Mr. Bourque pointed out.

Program of Instruction

While every effort will be made to show the visitors a good time, the purpose of the convention will not be a social event but rather a school of instruction for natural gasoline manufacturers in the problems of the industry. Great care was taken in making up the program to have addresses prepared on the conditions most vital to the members of the association. Some time before the program was made up, every member of the association was asked for suggestions as to the most practical subjects. From these answers subjects for discussion at the sessions were selected.

While a number of important addresses are scheduled for the convention, open discussions will be stressed at all sessions. In these discussions every natural gasoline maker will be expected to take part and present problems which have confrontd him and offer suggestions for the improvement and growth of the industry.

Among the outstanding addresses to be delivered during the convention will be that on "Absorption Oil" by A. F. Maxon, plant engineer of the Sun Company, Tulsa. A coincidence in the suggestions for subjects to be discussed was that nearly every member of the association requested that this phase of making casinghead gasoline be expounded. Mr. Maxon, an expert on this subject, will explain in detail points to be considered in absorbent oils and the processes to be used in taking the gasoline. Mr. Maxon's paper will be read at the afternoon session of the first day, following which the meeting will be thrown open for a thorough discussion on this subject to be led by R. R. Dean, assistant superintendent of the gasoline department of the Waite Phillips Co., Tulsa.

Other Important Subjects

Among other important subjects to be discussed will be those of "Residue Gas" and "Plant Lubrication." The problem of the residue gas, that which is left after the gasoline has been extracted in the absorption plant, is one of the most vital confronting natural gasoline manufacturers. Both subjects will be discussed Thursday afternoon.

Contracts of natural gasoline makers provide that the residue gas be returned to the producers for use in drilling and for other purposes but the percentage of gasoline left in the gas varies. L. F. Bayer, vice president and general manager of the Tidal Refining Co., Tulsa, in his address on "Residue Gas" will discuss this phase. It is in the residue gas that the biggest waste of the industry occurs. In the paper and in the discussion to follow the address the waste problem will be considered and means of conserving this supply taken up. J. H. Boyle, secretary-treasurer of Chestnut & Smith Corp., Tulsa, will lead the discussion on this subject to follow Mr. Bayer's address.

Every angle of plant lubrication will be treated thoroughly in the address to be delivered by C. A. Fitzgerald, assistant district manager of the Sun Co., Tulsa, on that subject. One of the most serious problems faced by the natural gasoline makers is lubrication. Many of these problems are expected to be iron out in this paper.

The discussion to follow this address is expected to be one of the most lively of the entire convention as every manufacturer will have many suggestions to offer on this subject, it is believed. The discussion will be led by G. M. Davidson, general superintendent of operation and construction of the Empire Gasoline Co., Bartlesville.

Although these three subjects may be of special value to the industry, all the subjects on the program are considered of unusual importance and every member and every other person connected with the natural gasoline industry has been urged to attend the convention.

To Discuss Treating

"Fire Prevention," "Treating" and "Water Supply and Water Treatment" will be other subjects to be discussed thoroughly at the convention as all are vital to the industry. H. L. Shoemaker, assistant chief engineer of the Standard Oil Co. of New Jersey, delivered an address on "Fire Prevention" at the recent convention of the Western Petroleum Refiners' Association at Kansas City but his talk on this subject at the Tulsa convention Wednesday morning will be on another angle.

"Treating" will be discussed by W. G. Hiatt, research engineer of the Phillips Petroleum Co., Bartlesville, at the Wednesday afternoon session. The address on "Water Supply and Water Treatment" will be delivered Thursday afternoon by Emby Kayne, general superintendent of the gasoline department of Skelly Oil Co., Tulsa. The discussion to follow the former subject will be led by R. M. Coyle, assistant superintendent of Chestnut & Smith Corp., Ranger, Tex. Discussion to follow the latter subject will be in charge of S. C. Carney, superintendent of the gasoline department of the Roxana Petroleum Co., Tulsa.

The California Outlook

As California is becoming more and more a power in the natural gasoline industry, the address on "The California Outlook," to be delivered Thursday afternoon by Harry J. Baurer, president of the Pacific Gasoline Co. of Los Angeles, is expected to arouse considerable interest. Mr. Baurer has made an intensive study of the California situation and will point out in detail the possibilities of that State and its probable influence on the industry as a whole.

F. L. Chase, operating manager of the Lone Star Gas Co. of Dallas, Tex., will preside at the sessions Wednesday while E.L. Peck, manager of the Empire Gasoline of Bartlesville, will have charge of the Thursday meetings.

The annual banquet of the association will be the closing event of the convention, it being scheduled for Thursday night. Although the banquet will be a social gathering, a program of benefit to natural gasoline manufacturers will be presented. Wednsday night of the convention has been left open for private entertainment.

Leadership of the association the coming year is a matter of speculation at this time. Although the association might be anxious to reelect D. E. Buchanan as president, Mr. Buchanan has expressed a desire that he not be given the office again. He has already served two years. Other officers of the association are F. L. Chase and A. M. Ballard, vice presidents: O. W. Crick, treasurer, and A. V. Bourque, secretary. The latter two officers are not elected by the association but are filled by the executive committee.

To Fill Vacancies

Twelve places on the executive committee are to be filled by election at the convention. Nine of these are because of expiring terms while the other three are vacancies caused by resignation or changes in membership during the past year. Members of the committee, whose terms expire this year are H. G. Ellis, Amity Gasoline Co., Bartlesville; John M. Hall, Oil State Gasoline Co., Tulsa; H. R. Johnson, Akin Gasoline Co., Tulsa; W. A. Melton, Liquefied Petroleum Gas Co., Tulsa; R. R. Owens, Marland Refining Co., Ponca City; George S. Ratcliffe, Texas Pacific Coal & Oil Co., Thurber, Tex.; L. C. Ritts, Oklahoma Eastern Oil Co., Tulsa, and A. J. Schlosser, Barnsdall Oil Co., Tulsa.

Vacancies to be filled because of resignations or changes in membership are E. A. Landreth, Landreth Gasoline Co., (now owned by Phillips Petroleum Co.); D. W. Moffitt, Mid-Continent Petroleum Corp. (Cosden); and G. G. Oberfell, Hope Engineering & Supply Co., Tulsa.

The report of the secretary and treasurer at the Thursday morning session of the convention will show that the association is on a sound financial basis. The organization has been able to meet all bills during the year and is closing the year with money in the bank. Mr. Bourque pointed out that this has been accomplished without levies or special assessments but through the regular dues only.

Leaders in the natural gasoline industry from all parts of the country are expected to attend the convention. Visitors will be here from California, New York, West Virginia, Ohio, Arkansas, Texas, Pennsylvania, Kansas and Louisiana, as well as all parts of Oklahoma. Among those who have notified headquarters of the association here that they will attend are R. E. Bering, president of the California Gasoline Corp., Los Angeles, Calif., and E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co. of Fort Worth, Tex.

PROGRAM FOURTH ANNUAL CONVENTION NATURAL GASOLINE MANUFACTURERS

WEDNESDAY, APRIL 22

Morning Session, 10 o'Clock

F. L. Chase, Lone Star Gas Co., Dallas, Tex., presiding.

Address of Welcome—F. L. Chase, operating manager of the Lone Star Gas Co., Dallas, Tex.

Annual Address—D. E. Buchanan, president of the Association of Natural Gasoline Manufacturers, Tulsa.

"Fire Prevention"—H. L. Shoemaker, assistant chief engineer, Standard Oil Co. of New Jersey, New York.

Appointment of nominating committee.

Afternoon Session, 2 o'Clock

"Absorption Oil"—A. F. Maxon, plant engineer, Sun Co., Tulsa.

Discussion led by R. R. Dean, assistant superintendent of the gasoline department of Waite Phillips Co., Tulsa.

"Treating"—W. G. Hiatt, research engineer, Phillips Petroleum Co., Bartlesville.

Discussion led by R. M. Coyle, assistant superintendent of Chestnut & Smith Corp., Ranger, Tex.

THURSDAY, APRIL 23

Morning Session, 10 o'Clock

E. L. Peck, Empire Gasoline Co., Bartlesville, presiding.

Report of secretary and treasurer.

Election of officers.

"The California Outlook"—Harry J. Baurer, president of the Pacific Gasoline Co. of Los Angeles, Calif.

Afternoon Session, 2 o'Clock

"Water Supply and Water Treatment"—Emby Kay, general superintendent of the gasoline department of Skelly Oil Co., Tulsa.

Discussion led by S. C. Carney, superintendent of the gasoline department of Roxana Petroleum Co., Tulsa.

"Residue Gas"—L. F. Bayer, vice president and general manager of the Tidal Refining Co., Tulsa.

Discussion led by J. H. Boyle, secretary-treasurer of Chestnut & Smith Corp., Tulsa.

"Plant Lubrication"—C. A. Fitzgerald, assistant district manager, Sun Co., Tulsa.

Discussion led by G. M. Davidson, general superintendent of operation and construction, Empire Gasoline Co., Bartlesville, Okla.

Thursday Night

Annual banquet of association at Mayo Hotel.

UNIVERSITY ROYALTY SUIT

AUSTIN, Tex., April 13.—A test suit of the new university oil royalties law, which diverts royalties into the university available fund, was directed by the school's board of regents Monday. The board will mandamus the State Secretary and Comptroller to transfer royalties to the available fund, and hopes to get the question settled by the Supreme Court before June vacation. A committee of regents, composed of W. C. Storey, Mart Royston, S. C. Padelford and Sam Nethery, was authorized to employ counsel to conduct the litigation.

Eastern Refiners Will Meet Next Week

Cambridge Springs, Pa., Convention of National Petroleum Association to Discuss Practical Issues of the Industry.

The growing tendency toward making conventions in the oil industry more practical and of a more worthwhile nature will outcrop again in the convention of the National Petroleum Association to be held at Cambridge Springs, Pa., next Wednesday and Thursday, April 22 and 23.

Members of the association are looking forward to one of the most successful conventions in the history of the organization. Preparations are being made for a record attendance, with every company member to have large representations at the sessions. Refinery officials from nearly all Eastern and Central States will attend.

Although the program has not been completed, nearly every address so far arranged has to do with some practical program, either of the refining industry or of the association. One afternoon will be devoted almost entirely in discussing problems of the association, plans for its growth and the practical relation of the association with the individual company members.

A new policy, which has been found practical in district meetings, will be carried out at the general convention at Cambridge Springs. The organization will be divided into groups for the discussion of technical problems of the industry. The group method of discussion

—Photo by Gruber.
P. S. Tarbox, Trustee

is being adopted in the National Petroleum Association as it is believed more benefit can be derived from a discussion of a subject among a few persons than in one large gathering, and some members are interested in one subject and some in others.

The group discussion system has been tried out in district meetings held during the past few months. The success of these meetings is responsible for the decision to follow out the same plan at the Cambridge Springs meeting.

A noteworthy feature of the program of the convention next week is the fact that a carefully worked out system has been developed in the selection of subjects to be discussed. Instead of addresses being picked at random, as has been done at many conventions, with different subjects for discussion being interspersed, the subjects have been picked with order and system, with each discussion being related.

Four main subjects will be handled at the convention and all the addresses and papers will deal with some phase of each of these. The four main subjects will be: "Up-to-date Methods of Oil Refining," "Traffic," "Preventable Waste in Oil Refineries," and "The National Petroleum Association."

PROGRAM NATIONAL PETROLEUM ASSN., CAMBRIDGE SPRINGS, PA. APRIL 22-23, 1925

Wednesday, April 22

10:15 a. m.—General subject: UP-TO-DATE METHODS OF OIL REFINING. P. S. Tarbox, trustee, presiding.
(a) "Knowledge and Experience in Oil Refining." Speaker to be announced later.
(b) "Still Construction, Operation and Fractional Distillation." Discussion led by W. S. Zehrung, chairman Oil City, Franklin, Titusville Manufacturing Group.
12:30 p. m.—Trustees meet at lunch.
2:00 p. m.—(c) "Wax House and Sweat House Operations." By C. D. Wyant, chemical engineer, United States Bureau of Mines. Discussion led by H. L. Peterson, chairman Warren Manufacturing Group.
(d) "Evaporation Losses and the Remedy." Discussion led by B. B. Stroud, chairman Bradford Manufacturing Group.
(e) "Filtering House and Its Problems." Discussion led by Harold C. Eaton, chairman Pittsburgh Manufacturing Group.
7:15 p. m.—Fellowship supper, informal. A few talks, some entertainment, no speeches. C. D. Chamberlin, presiding.

Thursday, April 23

10:00 a. m.—General subject: TRAFFIC. F. B. Fretter, trustee, presiding. "Traffic Activities." By Willis Crane, traffic attorney. After Mr. Crane's remarks to the general meeting there will be a group meeting of traffic managers.
11:00 a. m.—General subject: PREVENTABLE WASTE IN OIL REFINERIES. R. A. Wotowitch, trustee, presiding. Remarks by F. A. Epps. Discussion.
12:00 a. m.—Remarks, by Fayette B. Dow.
12:30 p. m.—Councillors' meeting. Each trustee will meet with his councillors (and group chairman, if groups have been organized) to discuss the work of the department of which he has charge.
2:00 p. m.—Address. Speaker to be announced later.
3:00 p. m.—General subject: THE NATIONAL PETROLEUM ASSOCIATION. Fred G. Clark, trustee, presiding.
(a) Treasurer's report; G. B. Hunter.
(b) "What the Association Means and Can Mean to My Company." Discussion.
(c) Membership campaign.
(d) Resolutions.

The first subject and the five addresses and discussions grouped around it will come at the opening session of the convention beginning at 10:15 Wednesday morning and continuing throughout the afternoon. P. S. Tarbox, Independent Refining Co., Oil City, Pa., will preside. All the five discussions have a direct

Sheldon Clark, First Vice President

bearing on the general topic. The first address at this session will be on "Knowledge and Experience in Oil Refining." No speaker has been announced so far for this address. "Still Construction, Operation and Distillation" will be discussed by W. S. Zehrung, chairman of the Oil City, Franklin and Titusville manufacturing group.

Folowing lunch at noon and a meeting of trustees, C. D. Wyant, chemical engineer of the United States Bureau of Mines, will deliver an address on "Wax House and Sweat House Operations." H. L. Peterson, chairman of the Warren manufacturing group, will lead the discussion following this talk.

Open discussions on "Evaporation and

O. P. Keeney, President

the Remedy" led by B. B. Stroud, chairman of the Bradford manufacturing group, and "Filtering House and Its Problems," led by Harold G. Eaton, chairman of the Pittsburgh manufacturing group, will follow this, closing the session.

The second general subject, "Traffic," will come up for discussion Thursday morning at 10 o'clock, with F. B. Fretter, of the National Refining Co. of Cleveland, Ohio, presiding at the meeting. The one main talk on this general subject will be made by Willis Crane, traffic attorney. Following this and an open discussion the meeting will be turned over to a group session of traffic managers.

At 11 o'clock the same morning, R. A. Wotowitch of H. L. Doherty & Co., of New York, will preside at a discussion of "Preventable Waste in Oil Refineries." The last general subject, "The National Petroleum Association," will be discussed at the closing session of the convention beginning at 3 o'clock Thursday afternoon. Fred G. Clark of the Clark Co., Cleveland, Ohio, will preside.

The final subject will be divided into four divisions: Treasurer's report, a discussion on "What the Association Means and Can Mean to My Company," plans for a membership campaign, and resolutions.

One of the general speakers of the convention will be Fayette B. Dow, Washinton counsel of the association. He will talk at noon Thursday. Another address has been scheduled for Thursday afternoon but the speaker has not been announced.

The one general social event of the convention will be a fellowship supper Wednesday evening. This will be strictly an informal occasion with C. D. Chamberlin, general counsel and secretary, presiding.

As the convention is not the regular business meeting of the association, there will be no election of officers and the present officers and trustees will hold over. O. P. Keeney, president, has been particularly active in preparations to

R. A. Wotowitch, Trustee

make this convention one of the best for the organization.

Other officers are: Sheldon Clark, first vice president; Frank B. Fretter, second vice president; C. D. Chamberlin, general counsel and secretary; Fayette B. Dow, Washington counsel; Fred W. Boltz, consulting traffic expert; Herbert G. Eaton, recording secretary, and G. B. Hunter, treasurer.

Trustees of the association are: O. P. Keeney, of the Tide Water Oil Co., New York; Sheldon Clark, Sinclair Refining Co., Chicago; F. B. Fretter, National Refining Co., Cleveland, Ohio; Fred G. Clark, of the Clark Co., Cleveland, Ohio; R. A. Wotowitch, H. L. Doherty & Co., New York; E. C. Gardner, Seneca Oil Works, Warren, Pa.; P. S. Tarbox, Independent Refining Co., Oil City, Pa.; L. P. Litzinger, Butler County Refining Co., Butler, Pa.

FLORIDA GASOLINE TAX

TALLAHASSEE, Fla., April 11.—Governor John W. Martin, in his first message to the Florida Legislature, recommended an increase in the State's present 3-cent gasoline tax; that a slight increase be made in the automobile license tax, and that a tax be placed on lubricating oils. He also suggested a heavier tax on trucks and busses.

NEWTON EQUIPMENT

The Pacific National Gasoline Company's plant shown here tested 100% charcoal test. Newton Plants are GUARANTEED to test 100% charcoal test. An order for the FOURTH Newton plant for the Pacific National Company has just been received. Newton efficiency has made a Newton Booster of the Pacific National.

In this plant, produced gasoline for less than one cent per gallon

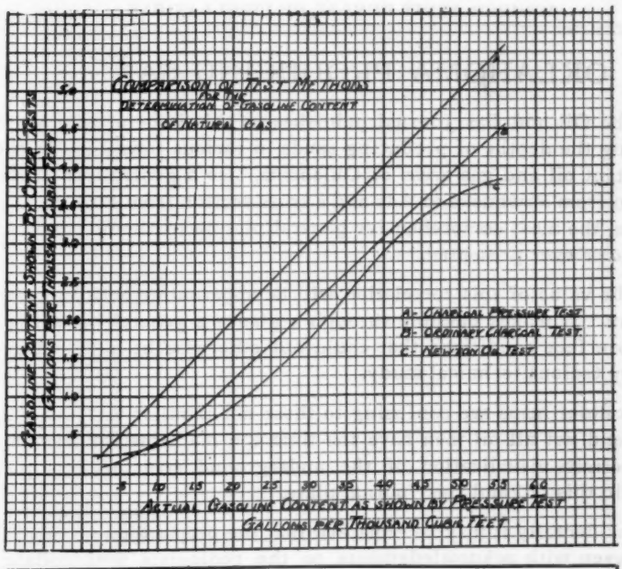
The Pacific National Gasoline Company purchased a Newton Plant in September, 1923. The cost per gallon of gasoline produced, on a 3,000-gallon basis, *taken from their books,* is as follows:

	Per Gallon
Cost of Absorption Oil	.00114
Cost of Wages	.00565
Cost of Sundries	.00468
Total cost per gallon	.01147

Recently their third Newton Plant (illustrated above) has been put in operation and shows an average cost per gallon of gasoline produced, on a 6,000-gallon basis, of .0052 or one-half cent per gallon!

This arresting proof is conclusive evidence that Newton Equipment will produce absorption gasoline at less operating expense than any other plant equipment in the country. They represent a lower investment and higher salvage value.

We will be glad to tell you how Newton Absorption Plants, or separate Newton Equipment, will add to the efficiency of your present plant. We manufacture, to meet your particular requirements, such equipment as Absorbers, Dephlegmators, Knock-out Boxes, Heat Exchangers, Evaporators and Cooling Towers.


Comparison of Test Methods for the Determination of Gasoline Content of Natural Gas
Gasoline Content as Shown by Other Tests
Gallons per Thousand Cubic Feet
A- Charcoal Pressure Test
B- Ordinary Charcoal Test
C- Newton Oil Test
Actual Gasoline Content as shown by Pressure Test
Gallons per Thousand Cubic Feet

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OKLAHOMA PRODUCING SANDS

The Oil and Gas Journal publishes in this issue a color plate showing the depths of producing sands in various townships in the important oil and gas areas of Oklahoma, also a generalized cross-section from Pawhuska to Ada and a cross-section from Phillipsville to Ada, the most comprehensive general picture of the oil sands of Oklahoma ever presented.

The value of this correlation will be apparent at once to every oil man. It makes possible through a glance a general knowledge of subsurface conditions that could not otherwise be obtained except by tedious technical study.

Contour maps are confusing to those not familiar with reading them and not all oil men have the time and mathematical memory that permits visualization of the underground structures as pictured in this Oil and Gas Journal plate.

Incidentally it may be remarked that the preparation of this insert, even with acknowledgments to the geologists who collaborated, was a work of infinite detail and labor while the printing itself called for the highest skill and experience.

The assembling of the information required a period of several months and the interpretation of that information on the map and by characteristic well logs that would build up a general cross-section demanded the most painstaking study in comparison and selection.

Ordinarily a work of this sort would be a proper function for the State Geological Survey if adequately supported by the Legislature, but in Oklahoma it is unfortunate that, notwithstanding the paramount importance of petroleum to the State, the geological study of its resources has been comparatively neglected except by individual oil companies.

This is the more remarkable when it is considered how much the oil industry contributes to the State in gross production tax for which it derives only the benefits of general Government, shared alike with the agricultural and other industries which pay no such tax.

A sense of ordinary fairness to the industry which pays so large a proportion of the State's revenue and a recognition of the fact that any assistance by the State which would enable that industry better to develop the State's resources would be a good investment, ought to have secured more generous support for the geological survey.

Instead it has been handicapped rather than helped. Even the profits from the well log division have been withdrawn and transferred to the Corporation Commission. When the Legislature made a special appropriation for a survey of three sands it turned out there was not sufficient funds to send out this survey from Oklahoma City when completed.

The Federal Government has appointed a commission to consider the conservation of petroleum and the Legislatures of all States have been advocates of conservation as a policy. Yet, in this matter of a geological survey, a fundamental practical step along that line, the Legislature of Oklahoma has been sadly deficient.

It has therefore remained for The Oil and Gas Journal to undertake a part of this needed work, as a matter of service to the oil industry

Local surveys have been made by geologists in special sections but not until now has there been available to the industry as a whole a generalized survey showing the correlation between all the sands in the important producing sections of the State.

Particularly this Oil and Gas Journal plate will be welcome to the oil men who have made no special study of geology, since it will answer questions constantly arising. Its scope embraces the bulk of the oil producing districts of the State which constitute the backbone of the entire petroluem industry of the nation and from which the supply of the future will come.

A great deal of the material embodied in this plate has been buried in geological bulletins or reports not generally accessible. For the first time it is put within reach of all interested in the plainest and most easily understood way.

It should be of value to the geological profession also because it is a concrete demonstration of their science. Not even the most obdurate flouter of the "rock hounds" can gainsay the evidence thus presented of the practical value of their knowledge to the oil industry.

At the same time it is an illustration of the difficulties of their task, exhibiting the erratic course of sands and srtucture which at times defy conjecture.

If the industry had a general picture of the underground conditions in all of the producing sections of the country such as this of Oklahoma its task of maintaining the nation's supply of petroleum products would be immeasurably aided.

The petroleum geologist has had to overcome many discouragements from misunderstandings as well as the practical difficulties of his work. He is now thoroughly established as an essential part of the oil industry. He is becoming better understood and appreciated.

This generalized cross-section of subsurface conditions in the chief producing territory of Oklahoma is of future as well as of present value. It not alone offers a picture of the record but opens opportunities for detailed study based upon this generalization that can be of the greatest service to the industry.

Geologists, in common with scientists in general, have often to initiate their work with only theories to go upon, approaching the truth by a process of elimination or analogy. This color plate has been based upon the opinions of those considered most apt by experience and familiarity with the subjects to be authoriative. Difference of opinion among geologists can be of real service by promoting discussion that will lead to ultimate agreement.

The Federal and State Governments concerned about that supply would be better employed encouraging such geological studies than in wasting time in hampering legislation and investigation.

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BRADFORD, PENNA., U. S. A.

Smackover Deep Sand Rich in Crude Oil

Enormous Producers Mark the Past Week in That Territory. Most of the Oil Will Go into Private Storage Awaiting Demand.

By James McIntyre

EL DORADO, Ark., April 13.—The experiences of the past few years in the oil business when the hopes of good prices for crude and refined oils have been repeatedly shattered by the opening and development of new oil pools of large production has caused oil men to view with some degree of alarm any new field or new supply of crude.

When the news was broadcast that a deeper producing sand had been discovered in the Smackover Field in Union County, Arkansas, it made the industry pause for the moment to consider the possible effect of a discovery that might develop into a production as great as that which the upper sand in the same field had yielded. The fact that the oil from the lower sand was of the same heavy gravity as that from the first sand, which has thus far been used largely for fuel purposes, somewhat relieved the industrial mind but the knowledge that it could

Gas blowout in the Smackover Field which caused a crater. The derrick was drawn into the hole and collapsed. The gas comes from a sand between the two oil sands and overlaying a salt water stratum. —Photo by Early Deane

be made to yield more than 25 per cent gasoline through cracking left a shadow of doubt in the minds of many students of the situation as to the effect it might have on the general crude market.

The big purchasing companies in the Mid-Continent Field through their accredited representatives freely expressed the opinion that the new heavy crude production in the Smackover Field would have no effect on general oil conditions, which quieted the fears of the timid ones. At that time the Smackover deep sand was yielding wells running from 600 bbls. up to 10,000 bbls., but most of the completions were small enough to keep the average production of the first 27 wells down to less than 1,200 bbls. per well.

Numerous Big Wells

Last week things began to pop in that field. Sunday night a 12,000-bbl. well was brought in by the Gulf Refining Co. of Louisiana in Section 9-16-15 and on Monday night a well flowing 500 bbls. the first hour was completed by the Marine Oil Co. in Section 5-16-15. The day after that it was learned that a well that had stopped flowing a few days before had come back with a production of about 10,000 bbls. a day or three times more than it had ever done before. This was one of the Sakaba Oil Co.'s early completions in Section 3. Then the Humble Oil & Refining Co.'s No. 5 Pate, in Section 19, entered the list with a production estimated at 10,000 bbls.

The well of the Marine Oil Co. was shut in long enough to put in two ⅝-inch chokes which cut the production down to 3,000 bbls. a day, but the four wells named, together with the gushers of the Sunny Jim Oil Co., and the Natural Gas & Petroleum Co. made a half dozen wells which, after all allowances had been made for over-estimating, were producing no less than 36,000 bbls. a day.

By mid-week the completions in the field had reached a total of 34 and the most conservative estimate on their total production was 65,000 bbls. a day. The Mazda Oil Co. had completed its second deep sand well in Section 10, with an estimated production of 2,500 bbls. Crawford, Sebastian & Groves in Section 5 had a well blowing wild and spraying 1,500 bbls. of oil; the Ohio Oil Co.'s No. 5 Pate, in Section 10 was good for 400 bbls. and Clark & Melat, in the northeast quarter of Section 4 were credited with a well good for 1,800 bbls.

The Imperial Oil Co.'s No. 3 Murphy, northeast quarter of Section 9-16-15, was the first of the big wells in the last half of the week. It started at 8,000 bbls. a day, but increased to 20,000 bbls. of fluid, about 24 per cent of which was water. The Amerada Petroleum Corp.'s No. 3 Calloway, southeast quarter of Section 4-16-15, came in at 10,000 bbls. on the same day, followed by the Sakaba Oil Co.'s No. 6, in the northeast of the southeast quarter of Section 6, which was estimated at 10,000 bbls. of fluid, 30 per cent water. The Texas Co.'s No. 9 Graves, in the northeast of the southeast quarter of Section 3-16-15, started at 5,000 bbls. a day.

Operators Quit Estimating

Oil men, who on the Sunday before were willing to give an estimate on the possible peak of production from the deep sand, and whose estimates varied from 65,000 bbls. a day to 200,000 bbls. a day, made no further attempt to guess what the high point would be. Things were coming too fast for them and the big wells even this early were so widely scattered as to warrant the thought that there might be many like them before the pressure diminished. The problem shifted to a consideration of how much sand area these wells would drain, and what the consequent effect would be on other wells not yet started on the same lease and on offset properties. The chokes used used in the Marine Oil Co.'s well were loaned with eagerness by the Standard Oil Co. of Louisiana, which owned an offset property.

The big well of the Gulf Refining Co. produced its 500 bbls. an hour with a very light showing of gas. The company had not expected a big well and the only storage nearby was two 500-bbl. steel tanks. The production filled one of these tanks in the first 57 minutes and the oil poured over the rim of the tank and down the hill into a creek bed which was dammed while a force of men were building a permanent earthen storage tank. This oil was reported to have tested 22.3 gravity, which is higher than the average of heavy gravity Smackover crude. The Marine Oil Co.'s well in the northest corner of Section 5-16-15, did not act like the Gulf's big one. It started with a large accompanying gas production. The company had a 75,000-bbl. empty earthen pit nearby and the oil shot out of a 4-inch pipe in a solid column to the opposite bank of the big pit. When the chokes were put in it sprayed through two 4-inch lines, the spray again reaching the opposite side of the pit.

Week End Completions

On Friday, The Texas Co.'s No. 7 Graves, in the southeast quarter of Section 3-16-15, started at 4,000 bbls. a day from 3 feet of sand at a total depth of 2,383 feet. This well was, up to that date, one of the two most easterly wells in the field producing from the deep sand, the Sakaba Oil Co.'s No. 6, a quarter of a mile directly north being the other. On the same day the Ohio Oil Co.'s No. 3 Murphy, in the northeast quarter of Section 9, came in at 5,000 bbls. from 8 feet of sand at a total depth of 2,408 feet, and the Gulf Refining Co. of Louisiana's No. 14 Hardie Murphy, southeast quarter of Section 4, started at 3,000 bbls. through a ¾-inch choker. It had 9 feet of sand at a total depth of 2,352 feet.

On Saturday the Ohio Oil Co.'s No. 4 Murphy, in the southeast of the northeast quarter of Section 9-16-15, started at 700 bbls. by heads from 4 feet of sand topped at 2,394 feet. It will be drilled deeper. The Roxana Petroleum Corp.'s No. 1 Murphy, in the northwest of the northeast quarter of Section 9-16-15, flowed 11,000 bbls. the first 4 hours and later flowed at the rate of 4,000 bbls. a day through a ¾-inch choke. It is producing from 11 feet of sand, total depth 2,385 feet. Ramage and others' No. S-4 Lawton, in Section 10-16-15, got 8 feet of sand, total depth 2,387 feet, and the well is good for 700 bbls.

135,000 Bbls. a Day

The production from the deep sand wells on Sunday was estimated very conservatively, after a careful consideration of all the conditions surrounding production by a group of veteran scouts, as 135,000 bbls. The Smackover heavy oil production from the 1,900-foot sand was estimated at 52,800 bbls., giving the whole heavy oil production as 187,800 bbls. a day. The average gross production for the week would be much less than this as the production on the previous

Sunny Jim Oil Co.'s big well in Section 9-16-15 pouring a stream of oil and water amounting to 10,000 bbls. a day. It is running down hill into an immense earthen storage pit. The fluid is 80 per cent oil. —Photo by Early Deane

Sunday was 27,700 bbls. from the deep sand and 53,000 bbls. from the upper sand or 80,700 bbls. a day.

On Sunday some of the wells which had started off at a tremendous rate were choked down to a point where the companies could take care of the oil. The Sunny Jim Oil Co.'s well in Section 9 flowed for about a week, after a short period of idleness, "went dead" again and when it was put on air produced 90 per cent water.

An estimate of the peak production made Sunday in the same conference just

(Continued on Page 117)

The Marine Oil Co.'s deep sand gusher in Section 5-16-15 flowing at the rate of 12,000 bbls. a day. The stream of oil was shot across to the opposite bank of a 75,000-bbl. earthen pit. It was later choked down to 3,000 bbls. —Photo by Early Deane

Converting good gas oil into fuel oil, when you can turn it all into good gasoline reminds us of the jumping frog, that felt proud of his achievement–leaping forward one foot with each jump and then slipping back two and thinking he was making progress

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Late News From the Fields

GULF COAST AND SOUTHWEST

HOUSTON, Tex., April 14.—In the South Liberty Pool, the Sun Oil Co.'s No. 1 Schade, completed at 3,640 feet, is flowing 1,500 bbls. of Grade A oil. The Gulf Production Co. set strainer in No. 1 Orgain at 3,680 feet for a test and Mills Bennett did the same in No. 8 Pickett at 3,445 feet.

OKLAHOMA

W. R. Ramsey's No. 1 Salinda, NE NW SE, Section 31-8-8, caused a stir in the Wewoka district when it was cleaned out and deepened 6 feet to a total depth of 3,250 feet and flowed 3,890 bbls. the first 24 hours. This well was completed November 14, 1924, and had an initial production of 997 bbls. from sand at 3,227 to 3,240 feet; it was later deepened to 3,244 feet.

The Magnolia Petroleum Co.'s wildcat in Section 15-8-7, west of Wewoka swabbed 85 bbls., and was deepened to 3,190 feet, where a little water was struck. It will be completed at this depth.

The Bement well, in Pawnee County, which is chronicled under the Oklahoma Field notes in this issue, has quit flowing entirely. The last flow was made on Saturday afternoon, April 11, and since that time the hole is standing full of oil and occasionally boiling over, but not enough to be called a flow. The tools are still in the bottom of the 8-inch casing and an effort is being made to fish them out and complete the well.

At Cromwell, an important development in the new north extension of the pool is the Gypsy Oil Co.'s No. 4 Jackson, SE cor. NE, Section 33-11-8, which had sand at 3,420-39 feet, and is a very poor well, making three very small flows; the first oil and gas was found at 3,434 feet. The poor showing of this well may be due to sand conditions, or it may mark the boundary of the pool, although the latter theory is unlikely as the offset to the east (Sinclair) is a much better well. The south offset to the well (Sinclair's No. 6) is a very light well, and a study of these conditions prompts the thought that some good production may be brought in northeast of the Gypsy lease.

North of the Papoose Pool, the Mid-Continent Petroleum Corp. and Wigton & Long have shut down their gas well in the SE cor. NE, Section 17-10-9. Sand was 3,319-39 feet, and the well is making 60,000,000 feet of gas. It will not be drilled deeper at the present time.

The Riverland Oil Co.'s No. 1, NE cor. NE, Section 34-19-11, 3 miles south of Sand Springs, is still holding up nicely, and is making 740 bbls. in the Turkey Mountain sand at 2,272-73 feet.

The wildcat well of the H. F. Wilcox Oil & Gas Co., SW cor. NW SW, Section 8-12-5, topped a sand which probably is Wilcox at 4,220 feet, and there is 400 feet of fluid standing in the hole.

Prairie Oil & Gas Co.'s No. 3, NW cor. SW, Section 34-6s-5w, in the Seny Pool, Jefferson County, Oklahoma, is swabbing 200 bbls. from sand at 1,200-1,215 feet.

Gypsy Oil Co.'s No. 1 Proctor, SW cor. NE, Section 35-8-8, in the Wewoka district, has 4,000,000 feet of gas and is spraying oil from sand at 3,256-62 feet. There is a little water which scouts are inclined to think comes from above.

In the Davenport district, the Magnolia Petroleum Co.'s No. 1, SE cor. SW NE, Section 27-15-15, missed the sand and is drilling at 3,440 feet. This will be made a deep test.

In the Donahoe Pool, the Black Gold Oil Co. has a hole full of water in the Wilcox sand 3,770-3,780 feet. This is a diagonal offset to the discovery well which topped the sand 3,714 feet, drilled to 3,730 feet, and plugged back to 3,726 feet. The Black Gold well is SE cor. NW Section 22-23-4.

WEST VIRGINIA

CLARKSBURG, W. Va., April 13.—The exceptional strike of a 4,000,000-foot gas well on the S. E. Shuttleworth heirs' farm at Romines Mills has caused a rush of leasing prospectors. The well was brought in by the Grasselli Chemical Co.

PENNSYLVANIA

BUTLER, Pa., April 13.—The largest gas well found in Butler County in 15 years was drilled in today on the A. G. Croll farm at Croll's Mills, 16 miles northwest of this city, on Slippery Rock Creek, for C. W. McCall & Co., of Pittsburgh, owners. The gas was found in the 100-foot sand and the well is reported having an initial production of 2,800,000 feet per day. It is in practically new territory.

ANOTHER LOCKHART WELL

SAN ANTONIO, Tex., April 14.—Mike Danley, in a well on the south half of the Mrs. A. H. Cardwell lease, at Lockhart, topped pay sand at 1,320 feet yesterday afternoon, the same depth as Cranfil & Reynolds and McClannahan & Crouch. The well widens the field to the southeast nearly a mile. It looks like a commercial producer and, if so, will make the eighth in the field.

LATE GUSHERS IN SMACKOVER

EL DORADO, Ark., April 14.—The deep sand production in the Smackover Field has extended northward into the southern line of sections in Township 15-15. Ten new wells were completed in the deep sand on Sunday and Monday of this week with a total initial production estimated at 35,900 bbls., an average of 3,590 bbls. per well. The late completions were as follows:

Gulf Refining Co.'s No. 2 Goodwin, SW cor. NE SW, Section 32-15-15, (80 acres), sand at 2,372-82 feet, 3,000 bbls.

Gulf Refining Co.'s No. 3 Bennett, SW cor. SE SW, Section 33-15-15, (60 acres) sand at 2,372-82 feet, 1,200 bbls.

Houston Oil Co.'s No. 5 Milner, CWL SE SE Section 3-16-15 (40 acres), sand at 2,931-95 feet, 4,000 bbls.

Lyell and others' No. 7 fee, CEL south half SW NE, Section 3-16-15, (20 acres) sand at 2,359-80 feet, 2,500 bbls.

The Texas Co.'s No. 9 Graves, NE cor. NW SW SE, Section 3-16-15 (40 acres), sand at 2,361-65 feet, 10,000 bbls.

Humble Oil & Refining Co.'s No. 7 Umsted, SE cor. NE NE, Section 5-16-15, (40 acres), sand at 2,354-65 feet, 1,200 bbls.

Sunny Jim Oil Co.'s No. 4 Flenniken, NW cor. SW SW, Section 9-16-15, (40 acres), sand at 2,431-42 feet, 7,000 bbls. Same company's No. 5 Flenniken, NE cor. SE SW SW, Section 9-16-15, sand at 2,494-2,502 feet, 1,500 bbls. The variation in the surface elevation accounts for the difference in the depth of the sand.

Ohio Oil Co.'s No. 4 Murphy, SE cor. SW NE, Section 9-16-15, (20 acres), sand at 2,394-2,404 feet, 1,500 bbls.

O. G. Murphy's No. 3 T. C. Murphy, SW cor. SE Section 9-16-15, (40 acres), sand at 2,456-64 feet, 4,000 bbls.

The proven deep sand area of the field on Monday night was 4 miles in extent east and west, 2 miles north and south on the west edge and 1 mile north and south on the east edge. Wells were producing in 9 sections.

NORTH CENTRAL TEXAS

SAN ANGELO, Tex., April 12.—Big Lake Oil Co.'s No. 18, in Block 9, Section 25, in the Reagan County Field, is making about 1,500 bbls. a day, drilled in at 2,899 feet.

JOSEPH H. DANIELS DEAD

BRADFORD, Pa., April 10.—Joseph H. Daniels, for many years engaged in pipe line building in the Pennsylvania and Ohio fields, died at his home here after a four-months illness. He was 64 years of age. His widow and one son, Frank Daniels, survive him.

PETROLEUM SAFETY COUNCIL ADOPTS UNIFORM RECORD FOR ACCIDENTS

By George R. Kelley

DALLAS, Tex., April 11.—By far the most noteworthy accomplishment of the two-day meeting of the Petroleum Safety Council, of the Mid-Continent Oil & Gas Association, held at the Adolphus Hotel here Friday and Saturday, was the formation of definite plans for determining and analyzing the cause of accidents in oil fields.

Elmo D. Murphey, safety engineer for the Mid-Continent Petroleum Corporation, formerly Cosden & Co., was made chairman of the committee charged with carrying on this particular phase of work. The committee is to adopt a uniform blank for the purpose of reporting accidents, the reports showing as far as possible all the causes contributing to the accident. These causes are then to be studied and analyzed and steps taken to prevent further accidents occuring from the same or similar causes.

Those present at the meeting showed more than usual interest in the paper read by Mr. Murphey on statistical records with relation to oil field accidents and it was after the reading of this paper that the discussion followed, the committee was agreed upon and Mr. Murphey was made its chairman.

Value of Films

Motion pictures showing the right and wrong way to get a job done were declared to be among the best accident preventives known to the safety workers, J. S. Gibson, of the Prairie Pipe Line Company, told the members of the safety council. "Live and Let Live," a movie of the industry, has been shown in five States, and it has reduced the number of accidents in oil centers of those States.

"Every oil community in five States has been educated by the use of that film," President H. W. Boggess of the safety council, told the members in a discussion following Mr. Gibson's address. "By means of the movie safety has been implanted in the homes. The wife of every oil man tells him each morning, 'Be careful today.'"

D. J. Wallace of the Humble Oil & Refining Company discussed "The Value of a Bulletin Service," and "The Relation of Company Executives to Safety" was the subject of a paper by W. C. Franklin, president of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association.

The membership of the council is composed principally of the safety engineers of the companies belonging to the Mid-Continent association and their discussions related to technical phases of their work.

At the session Friday morning President Boggess, representing the Sinclair companies, attached safety laws that had been enacted by politicians to curry public favor.

"The average safety laws fostered by politicians usually result in more harm than good," he said. Many times they cause resentment among workers on account of a lack of intelligence and as a usual thing cause employers to spend and waste vast sums of money to comply with terms of these laws without reaping any beneficial results."

Following President Boggess' address, Ray Miller, safety director of the council, spoke on "Council Plan."

H. H. Smith's Address

Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, addressing the convention said:

"Statistics of accidents properly gathered, compiled and analyzed point a moral. They tell the story of cause and effect. The study of them reveals the place and manner of new precautionary steps to avoid repetition. Since the law requires reports of accidents to State Industrial Commissions, the council believes that it is entirely feasible to cooperatively devise a uniform method of collecting, classifying and reporting these statistics to accomplish three worth-while purposes, towit: (1) To enable the operator affected to have in his office a more complete and valuable record of his accidents and compiled in a manner to enable him to make detailed comparison of his experience with the compiled average experience of other operators, (2) To facilitate the making of his reports to the State agency, and to promote uniformity in the character and form of report to be made by him in each of the States in which he operates, and (3) To enable the operator and the council to analyze the compiled reports of all accidents to discover the most usual causes and to devise means of prevention. I am advised that this work is under way and will be pushed with all possible speed."

In the session of the council Saturday J. G. Fitzhugh, safety engineer of the Santa Fe Railroad, read a paper on "Safety in Modern Industry;" J. J. Formes, district engineer for the Bureau of Mines at Birmingham, Ala., read a paper on "The Joseph A. Holmes Chapters."

J. E. O'Neil Resigns And W. S. Fitzpatrick Named by Institute

NEW YORK, April 14.—James E. O'Neil, formerly president of the Prairie Oil & Gas Co., has resigned as a director of the American Petroleum Institute. Mr. O'Neil's resignation, dated January 29, was acted upon at a meeting of the Institute directors on April 8. W. S. Fitzpatrick, at present chairman of the board of directors of the Prairie Oil & Gas Co., was elected to succeed Mr. O'Neil.

The announcement covering Mr. O'Neil's resignation follows:

"James E. O'Neil, who was reelected a director at the recent annual meeting of the Institute, declined to accept a directorship and resigned from the board. Mr. O'Neil, in a letter dated January 29, 1925, stated, 'I herewith tender my resignation as a director in the American Petroleum Institute. Am taking this action on account of the condition of my health and I feel it would not be for the best interest of the Institute for me to remain on the board without being active. I desire to express my appreciation and thanks to the other members for my recent election and wish continued success to the institute'."

WITH RECORD DEMAND OIL CITY SALES SLUMP

OIL CITY, Pa., April 11.—With the exception of weather conditions and actual consumption it is impossible to find a single encouraging feature of the Northwestern Pennsylvania refinery markets at the present time.

Refiners of this district state that actual consumption of gasoline and motor oils is running far in excess of the sales of these products at the refineries. This is due, they state, to the fear on the part of the jobbers and marketers that there will be a further reduction of the crude structure with resultant cuts in the prices of refined products. These are said to be the reasons why the jobbers and marketers are drawing on their storage rather than entering the market for additional goods.

Neutrals are very weak and stocks are a way off on a slow demand. Wax is also soft although some of the refineries contend it has reached bottom and that there is buying over May and June being done now.

Fuel oil continues soft.

LIVINGSTON ROE DEAD

Livingston Roe, formerly an official of the Standard Oil Co., who retired from active business life some years ago, died recently at his residence, 1 Farragut Place, Morristown, N. J., after a long illness.

Southwest Texas Fields

By Staff Correspondent

Completion of Cranfil and Reynolds-Marland Oil Co. in Lockhart Field estimated as good for 2,000 bbls. It was seventh commercial producer in new field. Lack of water in field holding back operations. Turn key drilling contracts being made for $7,000 with well completed within one week.

SAN ANTONIO, Texas, April 13.—Cranfil & Reynolds-Marland Oil Co.'s No. 1 F. A. Gomillion, the seventh completion and seventh producer in the new Lockhart Field in Caldwell County came in Friday noon making oil, flush production, at the rate of probably more than 2,000 bbls. per day. Some estimate it as more than the Sun Oil Co.'s No. 2 A. H. Gomillion, which came in last Monday at the rate of 2,000 bbls. daily.

The well came in flowing a steady stream into the slush pit and the 39 gravity oil disappears in that soil very rapidly. Saturday morning 1,500 bbls. were pumped into steel storage by 10 o'clock and there was considerable more in earthen storage that indicated a well above 2,000 bbls. It was a surprise to the owners, in spite of the fact that the Sun got a big well earlier in the week, and they had no facilities for handling it. Steel storage was being erected as rapidly as it could be secured.

The steel tape has not been run on any well in this field thus far and depths are ascertained by counting the drill stem. The Cranfil & Reynolds-Marland well in which the Godley Oil Co. also has an interest went 100 feet into the pay 30 feet deeper than the Sun Oil Co.'s biggest well. Operators with each new well are going deeper into the pay. The McClannahan & Crouch well which came in for around 300 bbls. Wednesday was drilled deeper and carried 137 feet into the pay. None of the wells has tested the thickness of the formation thus far. McClannahan & Crouch have gone the deepest. Saturday their well was bailed and failed to respond and flow though it is estimated to have the earmarks of a good pumper. The Cranfil & Reynolds-Marland well flowed naturally and cleaned itself when the tools were taken out of the hole after drilling in. Depth of the Cranfil & Reynolds well is 1,426 feet and the McClannahan & Crouch well 1,438 feet.

Forty-five tank cars of crude or from 11,000 to 12,000 bbls. had been shipped from Dale on the Katy railroad 3 miles south of the field by the E. & K. Pipeline Co. up to Saturday night. The first car was shipped out Monday, March 30, and the total for the first week was five cars. In that week there were but two producing wells, the discovery well of Lefevre & Storey and the Gulf Production Co.'s No. 1 Beaty, the first flowing about 70 bbls. and the other about 225 bbls.

Record of the Field

During the past week the Sun completed No. 1 A. H. Gomillion, on Sunday making better than 300 bbls. daily and the No. 2 on Monday making 2,000 bbls., estimated. Mid-Kansas Oil & Gas completed the No. 1 Brewer making about 300 to 400 bbls., McClannahan & Crouch completed their well on Wednesday estimated at about 300 bbls. but drilled it deeper and brought it in again on Saturday estimated at about the same amount as a pumper.

Friday the Cranfil & Reynolds-Marland well was completed bringing the total completions to seven. If water becomes available for all rigs there will be a few more completions this week. If sufficient for all rigs were available there would be several completed by next Saturday night. The lack of water is probably one of the best things that has happened to the new field, however, for it is giving the pipe lines a chance to build into the field. The Magnolia began the construction of its pumping plant on the W. H. Riddle tract south of the field Saturday. Grayburg has a line under construction. E. & K. Pipeline Co., which laid the first 3-inch line to Dale, has ordered pipe for an additional 4-inch line and the Atlantic is making preliminary arrangements to lay a line. At Dale, the Continental Supply Co., Oil Well Supply Co., Frick-Reid Supply Co., and Parkersburg Rig & Reel have all made reservations for supply yards and have unloaded the first shipments of supplies.

Turnkey contracts for the completion of wells are being taken at this time for right at $7,000. Drilling is easy and a well can be completed easily in less than a week.

The United North & South has completed a derrick on the 60-acres off the east end of the Mrs. F. A. Gomillion tract, of which Cranfil & Reynolds-Marland Oil Co. have the west 40 acres. The North & South is arranging to move several rigs from the Luling Field to Lockhart. The Grayburg Oil Co. will start two tests, one on the 50 acres off the north end of the C. Beaty tract and a half mile west of the discovery well and the other on the northwest corner of the M. L. Brewer tract nearly a mile east of the discovery well and south of the McClannahan & Crouch well.

The Sun Oil Co. is moving rig to No. 3 A. H. Gomillion, and has a derrick up offsetting the Cranfil & Reynolds-Marland well. Gulf Production Co. will probably complete the No. 2 C. Beaty this week, and is rigging up No. 3 Beaty and No. 1 Brewer offsetting Mid-Kansas and has a derrick up offsetting the Cranfil & Reynolds-Marland on the west.

Other Operations

Humble Oil & Refining has made locations offsetting Cranfil & Reynolds-Marland on the south and McClannahan & Crouch on the west, the locations being in opposite corners of the Mrs. M. L. Brewer tract. Lefevre & Storey are deepening their discovery well, drilling No. 2 Brewer and have derricks up for Nos. 3 and 4. Charles Anderson is rigged up on the Brownlee waiting for water. Mike Danley is down to 1,100 feet in No. 1 Mrs. A. H. Cardwell, and waiting for water. J. M. Davis spudded in several days ago and is waiting for water. Mid-Kansas' No. 2 Brewer has spudded in. Glasscock and others' No. 1 H. F. Brewer has derrick up waiting for rig to move in. Cranfil & Reynolds-Marland's No. 2 F. A. Gommillion is erecting derrick. Armstrong Brothers' No. 1 W. H. Riddle rigging up.

Theory of Geologists

Working on theories geologists are advancing the idea that the igneous in which the production is obtained has been washed down from volcanic eruptions at some distance from the new field and is not due to an igneous intrusion at that point and many of them will not be surprised if eventually 200 to 500 feet of the formation is found. It is in the horizon of the Taylor marl and probably received the oil from the Taylor marl.

Finding of this new shallow pool with possibilities of big production is encouraging the thought that still other pools will be found in the horizon of the Taylor marl, and geological work which took on new color along the Balcones when Mexia and other fields were brought in will take on still additional new color south of the Brazos River with the bringing in of this new pool at Lockhart, in the horizon of the Taylor marl.

Wilson County

Clark & Humphreys are rigging up No. 1 Tasto and will spud in early the coming week 3 miles southwest of Floresville in Wilson County. D. C. Clark of Clark & Humphreys is in south Texas and has been visiting the Lockhart Field with the possibility of starting some developments there.

C. E. Mahone's No. 2 Green is drilling below 500 feet. Douglas & Thomas' No. 1 Joe Kotzur, a few miles south of Carpenter, is reaming down from 2,190 feet, total depth 2,235 feet. It topped the Austin chalk at 1,985 feet and is still in it. Grayburg Oil Co. is moving in material for derrick and rig to spud in a test on a block of several thousand acres in the southwestern part of Wilson County near the Bexar and Atascosa County lines. Clarence Garrett's No. 1 Houck is drilling at around 1,500 feet, and Siebolt's No. 1 is rigged up having changed to rotary.

Guadalupe County

C. N. White's (Sights and others) No. 1 Gib Springs, south of Seguin, has been abandoned 100 feet in the Edwards lime at about 2,300 feet. It got sulphur water. Additional tests are likely to be made in the neighborhood. Jennings and others' (in which Roxana has a half interest) No. 1 Oscar Vogel, is rebuilding the derrick which blew down in a storm. McClannahan-Stebbins Oil & Gasoline's No. 1 Herman Lenz is waiting for rig. North & South's No. 1 Fulshur two locations away from the York Creek well on the same tract is on the sand at a little below 2,000 feet. York Creek's test, 1½ miles north of the Luling Field, will make 25 bbls.

Three Rivers Country

The Texas Co. expected to spud in today in No. 3 Regan, north of Oakville in Live Oak County. The company drilled three formation tests in that vicinity the first two of which were dry and the third, No. 2 Reagan, got several million feet of gas at 841 feet. The light righ has been changed for a heavy one for fear of heavy gas pressure. Number 3 Reagan is scheduled to be a deep test for logging purposes and with a rig capable of reaching 4,500 feet.

Casing has been set in Glasco & Fallin's No. 1 Tips, 1 mile west of Three Rivers that came in a gasser at 660 feet and ran wild for a day. Texas Pacific Coal & Oil Co.'s No. 1 Lark, north of the Calliham Field, that encountered gas at 650 feet, mudded it off and drilled to 1,000 feet where it is in the top of a gas sand that may make a well.

Pipe Line Runs

Pipe line runs from the Calliham Field in March were 8,936 bbls. In storage of the Live Oak Pipe Line Co., at Three Rivers at 8 a. m. March 1, was 2,895 bbls. In storage there April 1 at the same hour was 3,798 bbls.

San Balt Petroleum Co. is setting casing at 1,400 feet in No. 2 Shiner in McMullen County, south of the Nueces River. It is being set in cement. Drilling will resume about April 20. The object of the test is to ascertain possibilities of a sand at 1,500 feet encountered in No. 1 Shiner, a deep test, estimated at the time to be good for 10 bbls.

D. C. & M. C. Syndicate's No. 4 Lowe, is drilling at 1,704 feet in hard rock and making slow progress. Number 6 Lowe which picked up a shallow sand at 410 feet is setting casing and will pull the outside string of large casing and drill out the plugs in about a week and put the well on the pump. It is scheduled to prove up a new shallow pool estimated to be good for five bbls. Number 7 Lowe has been spudded in 360 feet north of No. 6.

W. G. Clark's No. 1 Scott, the only test at this time in Bee County, located 4 miles northeast of Beeville is drilling at 670 feet and expects to pick up gas within another 200 feet. It is located midway between the Houston Oil Co.'s gas field in Live Oak County on the west and the Goliad wildcat territory where the Houston Oil Co. is drilling at 1,000 feet on the Dick Woods farm 7 miles south of the city of Goliad. Seagraves and Moody have a big block of leases just north of Goliad city. All of it is on the line of the Houston Oil Co.'s pipe line from its Live Oak Field to Houston. Still farther east in Refugio County, the Gulf Production Co. has taken a block of 125,000 acres, after going all over the country with the seismograph, and other major interests have taken leases until it is claimed most of the county is under lease. The Gulf's biggest lease, that of 125,000 acres covers the Thomas O'Connor ranch in the eastern part of the county.

The Houston Oil Co. also has two rigs in Jackson County which is also on the line of its projected pipe line to Houston. Number 2 Drushel in Jackson County, near Edna, one of the big gas wells completed by the Jackson County Oil Syndicate which has furnished fuel for other tests, choked and stopped flowing. Tools were put in to clean it out and it blew in and ran wild for a day before choking itself in again.

Medina Shallow Field

Arnett Oil Co. has purchased the Nixon lease of 540 acres southwest of the eight 925-foot wells of the Ina Oil Co. in Medina County, south of Hondo and has resumed drilling on No. 2 Nixon. Purchase was made from R. P. O'Brien. No. 1 Nixon is producing. Contract calls for drilling of ten additional wells to the shallow sand.

Clark Oil Co.'s test in Uvalde County on the Florea ranch north of Sabinal will probably be abandoned. It went into cavity at 1,900 feet and lost all the returns, and 2,500 feet of casing failed to reach bottom. A 3,000-foot cable with window weights on the end let out to full length failed to reach bottom. Derrick and rig are still standing and may be skidded.

Hadley & Harmon-Continental Oil Co.'s No. 1 Pryor in Zavala County is drilling below 1,200 feet has increased showings of gas.

Mirando District

Deals are understood to be pending that may result in the purchase of a number of the biggest producing properties in the Mirando district of Webb County by a large concern. Some options have been taken.

National Oil & Refining Co. on survey 701½ in Webb County midway between the Cole Petroleum Co. gas field and the Carolina-Texas gas field is fishing at 3,200 feet. Because of its position it is one of the most important tests in the field. Carnahan Producing & Refining Co. has abandoned at 2,804 feet its No. 19 Garcia with a strong flow of fresh water.

In the Jim Hogg Field the Big Bend Oil Co.'s (Henne, Winch & Farisa) No. 8 Martinez at 2,011 feet swabbed 350 bbls. pure oil. Kisselman & St. Alban's

(Continued on Page 118)

North-Central Texas Field

By George R. Kelley

Purchase of South Vernon Oil Co.'s Stephens lease makes Humble Co. outstanding figure in Wilbarger County. North Young County has five new producers, not yet completed. Four new wells in Brown County nearing completion. Large number of wildcats in Wilbarger.

FORT WORTH, Tex., April 13.—Interest in the North Texas oil fields at present is centered around an oil property deal of considerable magnitude and much importance as it goes to show the favorable light in which the major companies view Wilbarger County as an oil producing territory.

This deal was between the South Vernon Oil Co., discoverer of the South Vernon Pool and the Humble Oil & Refining Co., whereby the Humble purchased the Stephens lease of the South Vernon Co. for a consideration of $1,100,000, of which sum $750,000 was paid in cash and the balance of $350,000 is to be paid out of seven-sixteenths of the oil produced. The property involved in the deal consists of 145 acres, all in the proven area of the South Vernon Field, with 11 producing wells, 9 drilling wells and 3 rigging up. Total daily production of the 11 wells on the lease is 1,000 bbls. The Humble has already taken over the operation of the lease.

Considerable property held by the South Vernon Co. was not included in the sale to the Humble. The company still holds the lease on 40 acres of the Zipperle land adjoining the lease sold to the Humble. In addition it holds the lease on a 90-acre block, considered to be in the proven area and also valuable royalty interests in the South Vernon Pool.

This transaction makes the Humble the one outstanding figure in the Wilbarger Field. It was among the first concerns to lay a pipe line to the field, it has a tank farm of large capacity and also a gasoline plant in the field. In addition the company has already developed considerable production on its Castlebury lease in the field.

Gain in Production

Average daily production for this week shows a gain of 1,662 bbls. over that of a week ago. Total this week is 147,295 bbls., against a total the previous week of 145,633 bbls. Practically all the districts showed gains with the exception of Young County and Stephens County. Young County fell off from 10,330 bbls. last week to a daily average this week of 9,685 bbls. Stephens County showed a decline of 242 bbls. The drop in Young County is attributed to the decline in flush wells completed there during the previous week. Burkburnett, Electra, Archer County and Ranger all showed small gains, while there was a gain in the miscellaneous column amounting to 1,448 bbls., due principally to the increase in Reagan County where one big well was connected with the pipe lines.

There was a total of 99 completions this week compared with 96 for the week before. Of the completions this week 55 were oil wells with a new production amounting to 8,651 bbls. There were 41 failures and 3 gas wells making a total of 67,000,000 feet of gas daily. The week before there were 61 oil producers making 6,458 bbls., 30 dry holes and 5 gas wells with a total output of 33,250,000 feet daily.

Once more Archer County had the largest number of recorded completions, with 31. Of these 21 were producers and 10 were failures. The county had 2,410 bbls. of new production, Wichita County reported 17 completions, 12 producers and 5 dry holes. New production in Wichita County amounted to only 543 bbls. Wilbarger County ranked third with 13 completions, 6 producers, 6 failures and 1 gas well making 2,000,000 feet. New production from the 6 producers amounted to 1,220 bbls.

Young County came fourth with 12 completions, only 4 of which were producers, 8 being dry holes. New production in this county was 807 bbls., or approximately an average of 200 bbls., per new well. Stephens County reported 6 completions, 4 producers, 1 failure and 1 gas well. New production amounted to 108 bbls. of oil and 15,000,000 feet of gas daily. Eastland County had only 3 completions, 1 producer making 24 bbls., and 2 dry holes. The wildcat districts accounted for 17 completions, 7 producers making 3,539 bbls., 9 failures and 1 gasser making 50,000,000 feet daily.

Wildcats in Wilbarger

There is continued intensive development in Wilbarger County. A large number of wildcats are drilling, some few of which should be at an interesting point within the next week. Atlantic Oil Producing Co. apparently has a fairly good producer in its No. 1 Waggoner, a diagonal offset to the northeast from the Levy and others' Waggoner wildcat which came in about a month ago. The Atlantic well got sand at 1,427 to 1,430 feet. It pumped 70 bbls., in 14 hours when it was shut down. On a later test of five hours the well pumped between 20 and 25 bbls. The same company has a good producer in its No. 2 Zipperle in the South Vernon Field of Wilbarger County. The well, though not completed is estimated to be good for 150 bbls. from sand at 1,288 to 1,312 feet.

The Humble Oil & Refining Co. has two good wells on its Castlebury lease, South Vernon Pool. They are Nos. 11 and 12, neither of which is completed but both showing for good producers. The two wells together are estimated to be making around 600 bbls. Kolp and others have brought in their No. 3 Waggoner in this pool while not completed is estimated making 150 bbls., from sand at 2,029 feet.

In Archer County Christie Brothers are about to complete a good well in No. 3 Campbell Bank. The well is flowing and swabbing at the rate of 400 bbls. Sand was found at 1,297 feet and drilled into 3 feet. Waite Phillips' No. 1 Wolf, Archer County wildcat, is showing for a fairly good producer. On a 14-hour test the well flowed between 35 and 40 bbls. It is producing from 1,372 to 1,377 feet. In the north half of Archer County the Atlantic Oil Producing Co.'s No. 6-A Parrish looks like a big producer from the sand at 1,558 to 1,565 feet. The well swabbed 145 bbls. in 18 hours.

Young County Producers

The North Young County area has five new producers that are not yet completed. Among them are two by the Simms Oil Co. on the Carpenter lease. The No. 8-A is swabbing at the rate of 200 bbls. daily from sand at 1,031 to 1,044 feet. It is reported this well will be shot. The same company's No. 3-B Carpenter is in a good sand at 1,015 feet and is flowing and swabbing at the rate of 400 bbls.

In this same district The Texas Co.'s No. 16 Gambrell is flowing by heads and making around 500 bbls. daily from sand at 1,204 to 1,217 feet. The Humble Oil & Refining Co.'s No. 3 Campbell is estimated to be good for 50 bbls. in sand at 1,036 to 1,042 feet and Murchison and others' No. 2 Haygood is estimated making 250 bbls. from a total depth of 1,005 feet.

There are four new wells in the north Brown County district, none of which is yet completed. Gillett and others' No. 2 Prather is making 80 bbls. from sand at 1,308 to 1,321 feet and Gillman and others' No. 8 Newton is making 50 bbls. from sand topped at 1,245 feet and drilled 21 feet. The Mahlstedt Mook Oil Co. has another producer on its Newton lease, the No. 7 reported good for 100 bbls. from sand at 1,270 to 1,292 feet. The best producer in this area though is Moore & Wilson's No. 1 Gafford, which is reported making 300 bbls. from the pay at 1,237 to 1,243 feet.

In Reagan County, the Texon Oil & Land Co.'s No. 5 Group 1, University, topped the pay at 3,006 feet and made 200 bbls. in four hours. It is still drilling.

In Stephens County The Texas Co.'s No. 11 Keathley is drilling at 2,445 feet with 1,000 feet of oil in the hole.

Parsons and others have a ges well in No. 1 Jones in Eastland County south of Ranger. The well was shot with 40 quarts at 3,065 to 3,087 feet and is making 4,500,000 feet of gas.

PRODUCTION REPORT

For Week Ending April 9, 1925

Burkburnett	
Gulf Production Co.	685
Humble Oil & Ref. Co.	425
Magnolia Petroleum Co.	2,925
Panhandle Refining Co.	330
Prairie Oil & Gas Co.	10
Sinclair Oil & Gas Co.	45
Sun Co.	140
The Texas Co.	505
Texhoma Oil & Ref. Co.	455
Miscellaneous	9,630
Total	15,150
Electra	
Empire Gas & Fuel Co.	1,020
Gulf Production Co.	920
Humble Oil & Ref. Co.	130
Magnolia Petroleum Co.	3,965
Panhandle Refining Co.	60
The Texas Co.	3,695
Texhoma Oil & Ref. Co.	1,665
Miscellaneous	6,065
Total	17,520
Iowa Park	
Gulf Production Co.	42
Humble Oil & Ref. Co.	5
Magnolia Petroleum Co.	525
Panhandle Refining Co.	30
Texhoma Oil & Ref. Co.	39
Miscellaneous	3,585
Total	4,226
Archer County	
Empire Gas & Fuel Co.	500
Gulf Production Co.	3,810
Humble Oil & Ref. Co.	825
Magnolia Petroleum Co.	780
Panhandle Refining Co.	270
Prairie Oil & Gas Co.	1,510
Sun Co.	257
The Texas Co.	2,320
Texhoma Oil & Ref. Co.	2,750
Miscellaneous	27,275
Total	40,297
Petrolia	
Gulf Production Co.	110
The Texas Co.	60
Miscellaneous	270
Total	440
Stephens County	
Empire Gas & Fuel Co.	90
Gulf Production Co.	1,425
Humble Oil Refining Co.	875
Magnolia Petroleum Co.	655
Mid-Kansas Oil & Gas Co.	1,770
Prairie Oil & Gas Co.	790
Sinclair Oil & Gas Co.	120
Sun Co.	302
The Texas Co.	1,655
T. & P. Coal & Oil Co.	1,000
Miscellaneous	7,596
Total	16,278
Ranger	
Gulf Production Co.	335
Humble Oil & Ref. Co.	50
Magnolia Petroleum Co.	625
Mid-Kansas Oil & Gas Co.	225
Panhandle Refining Co.	290
Prairie Oil & Gas Co.	495
Sinclair Oil & Gas Co.	385
The Texas Co.	245
Texas Pacific Coal & Oil Co.	885
Miscellaneous	3,010
Total	6,545
Moran	
Empire Gas & Fuel Co.	55
The Texas Co.	130
Texhoma Oil & Ref. Co.	130
Miscellaneous	2,430
Total	2,745
Young County	
Gulf Production Co.	500
Humble Oil & Ref. Co.	440

(Continued on Page 92)

RECEIPTS OF OILS FROM CALIFORNIA AND MARCH IMPORTS OF PETROLEUM

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the month of March totaled 3,150,000 bbls., a daily average of 101,613 bbls., compared with 1,669,000 bbls., a daily average of 59,607 bbls. for the month of February.

Receipts at Atlantic and Gulf Coast ports for the week ended April 4 totaled 356,000 bbls., a daily average of 50,857 bbls., against 783,000 bbls., a daily average of 111,857 bbls. for the week ended March 28.

At Atlantic Coast Ports—	Total March	Total February	Wk. End. April 4	Wk. End. March 28
Baltimore	110,000	181,000	95,000	.....
Boston	148,000	75,000	78,000	72,000
New York	1,317,000	991,000	183,000	318,000
Philadelphia	693,000	175,000	.....	313,000
Others	649,000	81,000	.....	.....
Total	2,917,000	1,503,000	356,000	703,000
Daily average	94,094	53,679	50,857	100,429
At Gulf Coast Ports—				
New Orleans and Baton Rouge	233,000	166,000	.....	80,000
Daily average	7,519	5,928	.....	11,428
Total Atlantic and Gulf Coast Ports	3,150,000	1,669,000	356,000	783,000
Daily average	101,613	59,607	50,857	111,857

According to figures collected by the American Petroleum Institute, imports of crude and refined oils at the principal ports for the month of March totaled 7,455,000 bbls., a daily average of 240,484 bbls., compared with 6,575,000 bbls., a daily average of 234,821 bbls. for the month of February.

Imports at the principal United States ports for the week ended April 4 totaled 1,521,000 bbls., a daily average of 217,286 bbls., compared with 1,998,000 bbls., a daily average of 285,429 bbls. for the week ended March 28.

At Atlantic Coast Ports—	Total March	Total February	Wk. End. April 4	Wk. End. March 28
Baltimore	486,000	441,000	30,000	130,000
Boston	497,000	475,000	118,000	127,000
New York	2,364,000	1,747,000	443,000	842,000
Philadelphia	285,000	180,000	.....	65,000
Others	955,000	939,000	148,000	245,000
Total	4,587,000	3,782,000	739,000	1,409,000
Daily average	147,967	135,071	105,572	201,286
At Gulf Coast Ports—				
Galveston district	774,000	894,000	85,000	191,000
New Orleans and Baton Rouge	1,729,000	1,281,000	475,000	378,000
Port Arthur and Sabine district	123,000	448,000	177,000	.....
Tampa	242,000	170,000	45,000	20,000
Total	2,868,000	2,793,000	782,000	589,000
Daily average	92,517	99,750	111,714	84,143
At All U. S. Ports—				
Total	7,455,000	6,575,000	1,521,000	1,998,000
Daily average	240,484	234,821	217,286	285,429

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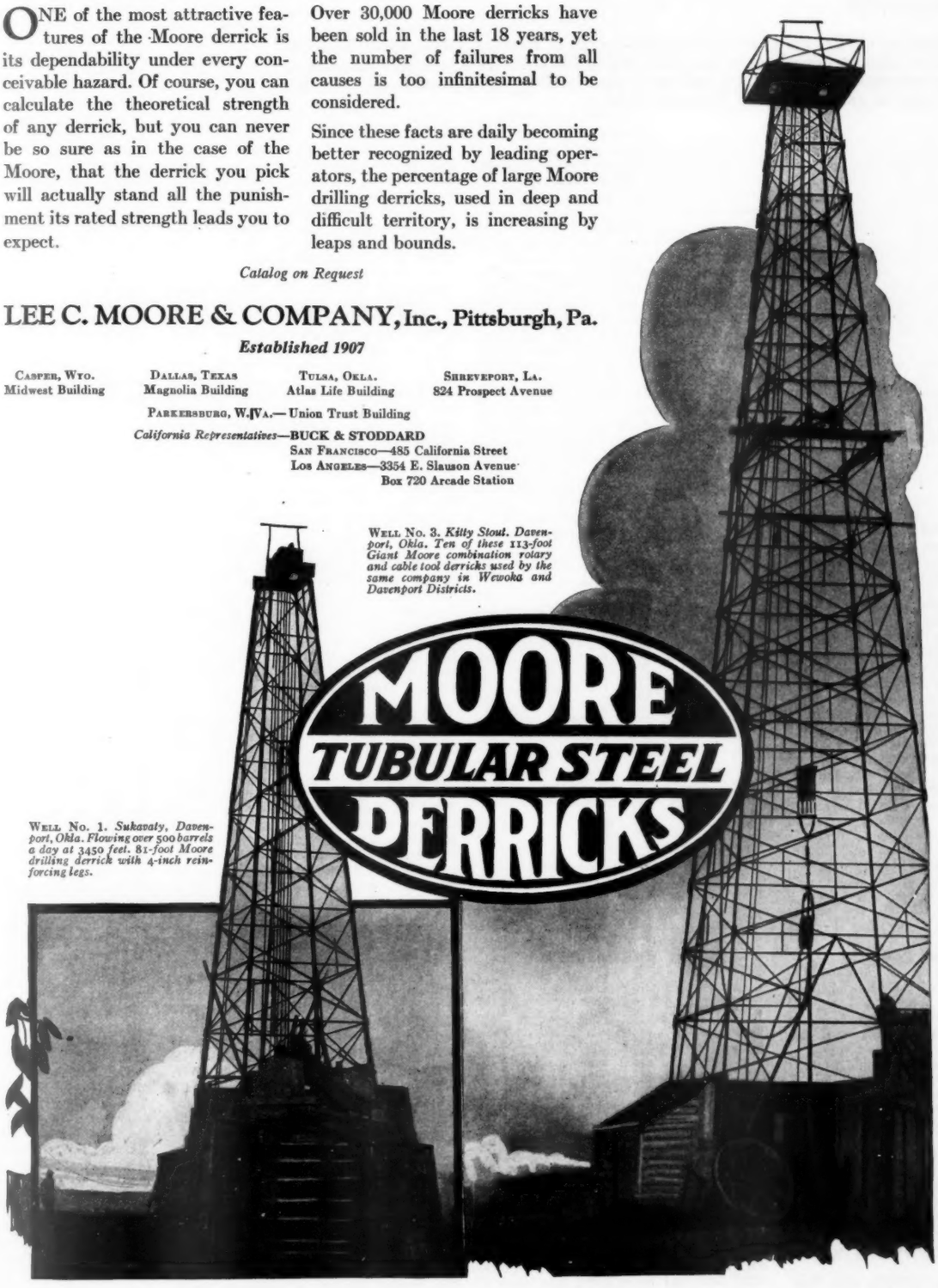


WELL NO. 3. *Kitty Stout. Davenport, Okla. Ten of these 113-foot Giant Moore combination rotary and cable tool derricks used by the same company in Wewoka and Davenport Districts.*

WELL NO. 1. *Sukavaty, Davenport, Okla. Flowing over 500 barrels a day at 3450 feet. 81-foot Moore drilling derrick with 4-inch reinforcing legs.*

Oklahoma Field Operations

By J. L. Dwyer

Bement Oil Co. completes well 6 miles north of Pawnee, Okla., which had 600 bbls. initial production and then dropped to 300 bbls. It is located 4 miles east of production. Deep sand well at Garber holding up in good shape. No oil found in gasser north of Papoose Field.

The principal attraction in the Oklahoma oil fields during the past week was the new discovery of the Bement Oil Co. in northern Pawnee County.

This well, about 6 miles north of the city of Pawnee, SE cor. SW SE, Section 30-23-5, topped the Peru sand at 2,762 feet and started flowing by heads at intervals of 20 minutes. Various reports of the amounts of the flows are made, and owing to the absence of tankage it was impossible to make any gauges of the well. The consensus of opinion placed the initial production at about 600 bbls. and it later dropped to approximately 300 bbls. The tools were thrown upward by the flow and lodged in the bottom of the 8-inch casing, causing a fishing job. As this is written the tools are still in the hole and the flow of the well has decreased greatly.

The closest production to the new well is in the Donahue Pool, some 4 miles west. The Prairie Pipe Line Co. has run a line and connected to the Bement well.

Garber Well Holds Up

The new deep sand well of the Sinclair Oil & Gas Co. (No. 25 Belveal, Section 25-22-4w) is holding up in splendid shape and for the past week the production averaged around 2,500 bbls. daily. Twelve new rigs are announced around this well.

At Davenport the latest completion of The Texas Co., which extended the pool half a mile east and a quarter mile south, (No. 1 NW cor. SW SW, Section 4-14-5) was shot with 30 quarts and did not immediately respond to the shot. After 24 hours, the flow of the well increased to a little better than 400 bbls.

New Well at Stroud

North of Stroud, the Skelly Oil Co. struck a sand where the Burgess sand should be found and the well, NE cor. NE, Section 7-15-6, is making about 240 bbls. a day. Sand was topped at 3,378 feet, and the casing is being run. The Independent Oil & Gas Co. drilled a well a quarter mile north of the Skelly well completed last November, and which is still pumping about 25 bbls. per day. It is producing in the same sand that the Skelly well found.

Papoose Pool

Many companies were disappointed when the gas well of the Mid-Continent Petroleum Co. and Wigton & Long, SE cor. NE, Section 17-10-9, was deepened and no oil was found. This well has been drilled 20 feet into sand found at 3,319 feet and is making around 24,000,000 feet of gas. It is being drilled deeper. Geologists have been hopeful that a new pool would be opened up by this well, which is north of the Papoose Pool.

In the south end of the Papoose Pool, the Minnehoma Oil Co. has extended production a half mile to the east in its No. 1, SW cor. NW NE, Section 1-9-9. The sand was found at 3,310 feet and 2,000,000 feet of gas encountered. According to information this throws the sand a bit high and the well is being watched closely.

In the Wewoka territory, the Magnolia Petroleum Co.'s No. 1 Caroline, NE cor. NE SE, Section 15-8-7, topped the sand at 3,182 feet and drilled to 3,187 feet. It is producing a little less than 100 bbls. a day, according to reports from the field. This is a wildcat 3 miles west of Wewoka.

East of Wewoka, the Gypsy Oil Co. saved its lease by making a fast run on No. 1 Proctor, SW cor. NE, Section 35-8-8. Sand was 3,256-62 feet, where 5,000,000 feet of gas and a spray of oil were struck.

Cromwell

There were no startling developments at Cromwell last week. Several important wells are nearing the sand, especially in the north end of the pool. The Gypsy Oil Co. has a production of about 6,000 bbls. on its Jackson lease, S half NE quarter Section 33-11-8.

The Carter Oil Co. is building a gasline plant in Section 3-10-8. It will contain 10 units.

Noble County

The wildcat well of the Bu-Vi-Bar Oil Co., in Section 15-21-2w, which had the Ragan sand at 1,902-10 feet, is pumping about 175 bbls. daily, although for the 24 hours ending April 11, it is reported to have made 212 bbls. without pumping off.

The log of the Bement Oil Co.'s No. 1 Box, SE SW SE, Section 30-23-5, follows:

Lime	20	Sand HFW	770
Slate	30	Slate	800
Lime	40	Lime	805
Red rock	50	Slate	830
Lime	65	Lime	835
Slate	75	Sand HFW	855
Lime	100	Slate	860
Shale	120	Lime	865
Lime	130	Sand H2O	875
Slate	140	Slate	885
Red rock	160	Lime	900
Slate	165	Slate	945
Lime	170	Lime	950
Slate	175	Lime	990
Lime	200	Red rock	995
Sand H2O	215	Lime	1,000
Lime	225	Red rock	1,005
Slate	230	Lime	1,015
Lime	240	Slate	1,025
Slate	250	Lime	1,028
Red rock	255	Sand HFW	1,060
Lime	260	Slate	1,100
Shale	275	Lime	1,105
Red rock	280	Shale	1,170
Slate	290	Shale, gray	1,308
Lime	295	Sand H2O	1,335
Slate	330	Red rock	1,550
Lime	335	Slate	1,575
Slate	415	Shale	1,633
Red rock	420	Sand H2O	1,642
Slate	460	Slate	1,660
Red rock	495	Lime	1,712
Lime	500	Slate	1,800
Slate	505	Sand	1,812
Lime	525	Slate	1,890
Slate	550	Sand H2O	1,910
Lime	555	Slate	1,922
Slate	565	Sand	1,924
Lime	570	Shale	1,938
Slate	600	Sand	2,000
Red rock	605	Shale	2,040
Lime	610	Lime	2,050
Red rock	615	Sandy lime	2,106
Slate	630	Slate	2,166
Lime	640	Lime	2,204
Slate	660	Slate	2,350
Lime	670	Sand show	2,360
Slate	680	Slate	2,430
Lime	685	Sand	2,460
Slate	690	Shale	2,600
Red rock	700	Sandy shale	2,645
Lime	710	Lime	2,660
Slate	720	Slate	2,722
Lime	725	Lime	2,730
Slate	735	Slate	2,760
Lime	740	Lime shell	2,762
Slate	755	Top sand	3,762

Symbols—H2O, water; HFW, hole full water.

Tonkawa

The Wents Oil Corp.'s No. 48 McKee, CNL SW Section 34-25-1w, made 2,593 bbls. naturally in sand 4,255-4,280 feet. Its No. 49 McKee, SW cor. NE SW Section 34-25-1w, had sand 4,260-4,281 feet, and made 1,682 bbls. after a shot of 55 quarts from 4,262 to 4,280 feet.

Marland Refining Co. is building the rig for No. 1-A Chambers, SW cor. NE NE Section 9-25-2w; No. 1 Chambers is dry and abandoned at 1,615 feet, SW cor. NW NE Section 9-25-2w.

The Carter Oil Co. has 2 dry holes in the deep sand in No. 11 Stewart, SW cor. NE Section 35-25-1w, dry at 4,700 feet, and No. 12 Stewart, SE cor. SW NW, Section 35-25-1w, which is dry and abandoned at 4,365 feet.

McMann Oil & Gas Co.'s No. 5 Warren is dry and abandoned at 3,455 feet in the SW cor. SE SE Section 27-25-1w.

Amerada Petroleum Corp.'s No. 40-A Woods, NE cor. NW NE Section 34-25-1w, is making 40 bbls. on the swab from sand 4,118-4,222 feet.

The Comar Oil Co.'s No. 3-W Endicott, SE cor. NE SW Section 35-25-1w, is dry and abandoned at 1,963 feet; as are its No. 4-W Endicott, NW cor. SW SE, Section 35-25-1w, at 1,914 feet; No. 5-W Williamson, CSL SW NW SE, Section 35-25-1w, at 2,545 feet, and No. 6-W Williamson, SE cor. SW SE Section 35-25-1w, at 1,544 feet. Its No. 14-W Blubaugh, SE cor. NW SW Section 2-24-1w, swabbed 12 bbls. from sand 4,247-4,252 feet; No. 15-W Blubaugh, SE cor. NW SE Section 2-24-1w, swabbed 60 bbls. of oil and 150 bbls. of water, sand 4,152 to 4,231 feet; No. 3-W Blubaugh, SW cor. NW SE Section 2-24-1w, has 2,000 feet of fluid in the hole, sand 4,169 to 4,172 feet; No. 15-W Ellsworth, CSL NE Section 2-24-1w, is dry and abandoned at 4,078 feet, and No. 10-W Carmichael, CEL SE NE Section 3-24-1w, had sand 4,248-4,315 feet, swabbed 15 bbls. oil and 180 bbls. water and was plugged back to 4,295 feet.

Garber Field

In the Garber Field, Crews' heirs completed No. 23 Crews, CWL SE Section 19-22-3w, which made 30 bbls. on the pump from sand 1,980 to 2,012 feet.

The Sinclair Oil & Gas Co. has a rig on the ground for No. 6 Whitney, CWL NW NE Section 18-22-3w; its No. 9 Hartley, an old well drilling deeper, has reached a depth of 2,217 feet; No. 2-B Shaffer, NW cor. SE Section 18-22-3w, is drilling at 2,375 feet, and it is rigging up to drill deeper in No. 21 Belveal, CWL SW NE NE Section 24-22-4w.

The Imo Oil & Gas Co.'s No. 2, NW cor. NE SW Section 31-22-4w, is drilling at 830 feet; Marland Refining Co. & Mid-Continent Petroleum Co.'s No. 40 School Land, NE cor. Section 13-22-4w, is drilling at 1,635 feet; the Sinclair Oil & Gas Co.'s No. 18 Kisner, SW cor. NW NE Section 19-22-3w, is drilling at 810 feet; Sinclair Oil & Gas Co. has a rig built for No. 19 Kisner, SE cor. NW NE Section 19-22-3w; No. 18 Campbell, CWL NW SE NW Section 30-22-3w, is drilling at 1,430 feet, and it is rigging up for No. 20, SE cor. NE NE, Section 25-22-4w.

Cromwell

A flock of new operations have been started as the result of the north extension of the Cromwell Pool. Waite Phillips Co. and the Mid-Continent Petroleum Co. have 4 rigs on the ground on their lease in the north half SW of Section 33-11-8. Waite Phillips and Mid-Continent Petroleum Co.'s No. 3, NW NE SW Section 33-11-8, is building; No. 4, NE cor. NW SW, Section 33-11-8, is a rig; No. 5, NW cor. SW Section 33-11-8, is a rig; and No. 6, SW cor. NW SW Section 33-11-8, is being built.

The Mutual Oil Co. completed 2 wells in Section 33, No. 2 Pierce SE cor. SW SE, which made 80 bbls. oil and 20 million gas from sand 3,318 to 3,406 feet, and No. 3 Pierce, NE cor. SW SE Section 33-11-8, which made 40 bbls. oil and 25 million gas from sand 3,296-3,379 feet.

The Pure Oil Co. completed two light wells in the south part of 33-11-8, No. 2 SW cor. SE SW, making 10 bbls. oil and 10 million gas from sand 3,345 to 3,445 feet; and No. 4 NE cor. SE SW, making 10 bbls. oil and 8,000,000 feet or gas from sand at 3,318 to 3,458 feet.

McMan Oil Co.'s No. 1 Hill, SW cor. SE SW, Section 34-11-8, was completed for 820 bbls. naturally, sand 3,348-3,414 feet, water at 3,405 feet, and was plugged back to 3,390 feet; and its No. 2 Hill, NW cor. SE SW Section 34-11-8, made 35 bbls. an hour from sand 3,366-3,398 feet, first oil was found at 3,377 feet.

The Sinclair Oil & Gas Co. and the Gardner Petroleum Co. completed No. 2 Hill for 35 bbls. an hour from sand 3,333-3,390 feet, first oil at 3,371 feet; their No. 3 Hill, NW cor. SW SW, Section 34-11-8, topped sand 3,373 feet, had the first oil 3,388 feet, and was drilled to 3,430 feet. It produced 65 bbls. an hour. Water was struck in last foot drilled, and the oil was cutting about 4 per cent, and the well will be plugged back. The same companies' No. 6, NE cor. SW SW Section 34-11-8, topped the sand at 3,366 feet, had first oil at 3,373 feet, with a total depth of 3,416 feet and it is making 42 bbls. per hour.

Southwestern Petroleum Co. completed a 2,500-bbl. well in No. 1, NW cor. SE Section 3-10-8. Sand was from 3,337-3,447 feet and the well made 920 bbls. naturally and was shot twice with 20 quarts, after which it made 2,530 bbls.

The Carter Oil Co. completed No. 6 Dunn, NW cor. NW Section 3-10-8, for 25 bbls. an hour from sand 3,377-3,432 feet with first oil at 3,403 feet.

The Carter Oil Co. is building 4 new rigs on the Dunn lease in Section 3-10-8; No. 12, NW cor. SE NW; No. 13, NE cor. SE NW; No. 14, SW cor. NE NW, and No. 15, SE cor. NE NW.

The Roxana Petroleum Corp. has completed No. 6 NE cor. SE Section 3-10-8, with sand 3,374-3,454 feet and the well made 720 bbls. naturally. It was shot with 30 quarts and increased to 1,063 bbls. and when shot the second time with 40 quarts made a small increase. The Roxana Petroleum Corp. is building the rig for No. 4, SE cor. NE SW Section 3-10-8.

The Southwestern Petroleum Co.'s No. 6-A, NW cor. SE NE Section 4-10-8, is making 20 bbls. an hour from sand 3,420 to 3,475 feet, and it has built the rig for No. 2 Little, SW cor. NW SE Section 3-10-8.

J. W. Sartain is building the rig for No. 1, NE cor. NE Section 5-10-8, and the Magnolia Petroleum Co. has a rig on the ground for No. 2 NE cor. SE NE Section 5-10-8.

The Pure Oil Co. is building the rig for No. 5 Jackson, SW cor. SW Section 33-11-8.

Sinclair Oil & Gas Co. has completed No. 2 Fixico, NE cor. SE Section 5-10-8, sand 3,434-3,466 feet, total depth 3,468 feet; first shot 7 quarts, small increase and second shot 10 quarts. The well made 360 bbls. the first 24 hours after shot.

The Prairie Oil & Gas Co. has completed No. 12 Buckner, NW cor. NE SE Section 8-10-8, for 50 bbls. a day from sand 3,430 to 3,468 feet; the Pure Oil Co. is fishing for tools in No. 12 Bunner, NE cor. NW SE Section 9-10-8, the well being 3,384 feet in sand with 1,000,000 gas and no oil.

The Magnolia Petroleum Co. is moving in a rig for No. 3 Williams, SE cor. NE NE, Section 5-10-8; the Mid-Continent Petroleum Co.'s No. 2 Bunner, SE cor. NE NE Section 17-10-8, is dry and abandoned at 3,550 feet.

Kay County

The Una-Lee Oil Co.'s No. 1 Johnson, a wildcat, NE cor. NE Section 18-27-1w, was completed after the tubing and a packer had been run, and made 112 bbls. naturally from sand 3,485-3,486 feet.

The O'Kansas Oil Co.'s No. 1 Townsend, NE cor. NW NE Section 28-26-

2w, is dry and abandoned at 4,261 feet.

The Tidal Oil Co. is building a rig for No. 1 Johnson, SE cor. SW SE, Section 8-27-1w; the Blackwell Oil & Gas Co. has a rig for No. 2, CSW SE Section 9-27-1w; the Mutual Oil Co.'s No. 1 Richmond, SE cor. NE NW Section 1-26-2w, is drilling at 550 feet; the Prairie Oil & Gas Co. is rigging up for No. 1 Boyce, NW cor. NW Section 17-27-1w; Soligney and others' No. 1 Harris, NE cor. SE NW Section 31-27-2, is spudded; the Comar Oil Co.'s No. 3 Priboth, SW cor. SE NW Section 21-29-1w, is spudded; Comar Oil Co.'s No. 4 Priboth, SW cor. SE NW, Section 21-29-1w, is spudding.

Kay County Extension

In the Kay County extension of the Burbank Field, the Phillips Petroleum Co. shot an old well that was making 100 bbls. and now has a 600-bbl. well in No. 12 CWL SE NE SE Section 11-27-5. The well was shot from 3,006 to 3,054 feet with 120 quarts. Phillips Petroleum Co.'s No. 4, same lease, SE cor. NE Section 11-27-5, has been completed as 700-bbl. well It made 500,000 feet of gas at 2,962 feet; 3,000,000 feet at 2,974 feet; 6,000,000 at 2,984 feet and oil at 2,990 feet; total depth 3,027 feet.

Phillips Petroleum Co.'s No. 3, SE cor. SE SW Section 12-27-5, hit the sand at 2,998 feet, had the first oil at 3,000 feet, was drilled to a total depth of 3,068 feet where the hole filled with oil, and was given a shot of 160 quarts after which it produced 100 bbls. Phillips Petroleum Co.'s No. 9, same lease, CWL NW SW Section 12-27-5, had the top of sand at 2,992 feet, and the first oil at 3,000 feet, 1,000,000 feet of gas at 3,002 feet, was drilled to 3,049 feet where it was a 50-bbl. natural well. It was shot with 140 quarts from 2,992 to 3,048 feet, and is completed for a 600-bbl. well. Phillips Petroleum Co.'s No. 10, C SE NW SW Section 12-27-5, made 100 bbls. naturally, with top of sand 2,971 feet, oil at 2,985 feet and total depth 3,045 feet. The same company's No. 13, C NW SW, Section 12-27-5, had 500,000 feet of gas in the top of sand at 2,977 feet, oil at 2,982 feet and total depth 3,025 feet, and made 700 bbls. the first 24 hours. Phillips Petroleum Co.'s No. 15, CNL NE SW Section 12-27-5, topped the sand with 3,000,000 feet gas at 2,975 feet, found the oil at 2,980 feet, made the first flow at 2,990 feet, and at a total depth of 3,036 feet made 400 bbls. naturally and was shot from 2,976 to 3,036 feet with 150 quarts after which it made 500 bbls.

Phillips Petroleum Co. is building 5 rigs on this lease in Section 12-27-5; No. 4, SE cor. NW of the section, No. 8, C NE SE NW, No. 13, NW cor. NW, No. 14, C NE NW NW and No .16. NE cor. NW quarter.

Kay County

The Comar Oil Co. has completed No. 2 Kincaid, SW cor. SE NE Section 21-29-1w, with sand 2,098-2,108 feet, for 113 bbls. naturally. Its No. 4 Kincaid, NW cor. SW NE Section 21-29-1w, is rigging up. It has completed No. 4 McCormack, SW cor. NW SE Section 21-29-1w in sand 1,915 to 1,928 feet for 165 bbls. natural, and its No. 4 Duncan, NW cor. NE SW Section 21-29-1w, is being rigged up.

Osage County

The Twin States Oil Co. completed a Bartlesville sand well, No. 8, CNL NW NE NE Section 13-23-8 with sand topped at 2,048 feet; total depth 2,134 feet and pay 2,070-2,100 feet. The well was shot from 2,048 feet to 2,124 feet with 180 quarts, and is swabbing 160 bbls.

The Riverland Oil Co. has drilled an old well deeper, No. 3 C SE SW Section 14-22-8, where the old total depth was 2,667 feet, and is making 65 bbls. an hour at 2,676 feet.

The Marland Refining Co. is spudding No. 49, CSL SE SE NE Section 18-24-12.

The Red Bank Oil Co. has abandoned a rig for No. 6, CSL SW SW Section 20-23-8, and is building a rig for No. 7, CEL NE NW NW Section 29-23-8.

On the western edge of the Osage Nation, the Prairie Oil & Gas Co. is spudding 2 wells, and has built rigs for 4 others. Number 1 Hays, SW cor. SE Section 12-27-5, is spudded; No. 2 Hays, CWL NW SW SE Section 12-27-5, is a rig; No. 3 Hays, CWL SW NW SE Section 12-27-5, is rigging up; No. 4 Hays, NW cor. SE Section 12-27-5, is spudded; No. 12 Hays, CSL SW SW SE Section 12-27-5, is a rig; and No. 13 Hays, C NE SW SE, Section 12-27-5, is a rig.

E. B. Lawson is drilling No. 13 C south half SW NW, Section 28-25-8, at 595 feet; The Texas Co.'s No. 15, SW cor. NE Section 29-25-8, is a machine; Oliphant and others are moving in a machine for No. 1, CNL NW Section 31-25-8.

The New England Pipe Line Co. has completed No. 12, CSL SW Section 19-25-9, for a 15-bbl. pumper in the Burgess sand topped at 2,236 feet. It was drilled to 2,268 feet and shot with 60 quarts.

The Barnsdall Oil Co. has spudded No. 3, CWL NW NW Section 11-24-11. The Barnsdall Oil Co. has a rig for No. 21, C SE SW, Section 20-21-9. Holmes and others have completed No. 1 Stoneman, NW cor. SE SE Section 28-20-9, sand 2,720 to 2,723 feet, for 200 bbls. naturally. Oswego Petroleum Co. and others have completed No. 1, NE cor. NE Section 21-21-12, for a 30-bbl. Bartlesville well, sand 1,325 to 1,370 feet, shot with 30 quarts. Tidal Oil Co. has completed No. 6 NW cor. NE NW Section 31-21-12, for a 10-bbl. well, sand 1,941 to 1,948 feet. Barnsdall Oil Co.'s No. 11, CSL SE SE Section 5-20-12, is a 90-bbl. well, sands 1,974-,1982 feet and 2,042-2,044 feet.

Titus and others are rigged up for No. 8, C NE NE, Section 6-21-11; Elliott & Smith's No. 3, SE cor. NE NW Section 30-21-12, topped the Wilcox at 1,953 feet, had a show of oil and are drilling ahead; Grimes & Gillespie are drilling a twin well, No. 11, SE cor. SE Section 32-21-12, present depth 312 feet; Sand Springs Home's No. 1, CNL NE NE Section 22-20-11, is dry and abandoned at 2,515 feet; Grimes & Gillespie are moving in a rig for No. 25, CNL NE Section 8-20-12; Oklahoma Natural Co. is moving in a machine for No. 679, SW cor. NE Section 29-20-12.

The Prairie Oil & Gas Co. has two new rigs, No. 1, NW cor. SW, Section 15-26-6, and No. 2 CWL SW NW SW Section 15-26-6. The Carter Oil Co. has spudded No. 4, CEL SE NE NE Section 21-26-6. The Lewis Oil Co.'s No. 4, CWL SW NW NE Section 21-26-6, is drilling at 200 feet.

The Carter Oil Co. has completed No. 3, CNL NW NE NW Section 21-26-6, which topped sand at 2,910 feet and had oil at 2,930 feet and bottom sand 2,982 feet, total depth 2,934 feet, good for 10 bbls. naturally. It was shot with 120 quarts and made 390 bbls. the first 24 hours. The Carter Oil Co.'s No. 5, CEL SE NE NW Section 21-26-6, is drilling at 360 feet; its No. 6, SW cor. NE NW Section 21-26-6, is rigged up and spudded; and No. 7, SE cor. NW NW Section 21-26-6, is drilling at 110 feet; No. 8 CWL SW NW NW Section 21-26-6, is rigged up; The Texas Co.'s No. 12, CWL W half NE Section 29-25-8, is fishing at 2,288 feet.

Papoose

The Prairie Oil & Gas Co. has abandoned No. 5 Sawyer, CEL SE NE SE, Section 35-10-9, at 2,970 feet, and is skidding the rig 50 feet east, where it will be rebulit and started with rotary tools. This is the first entry of rotary tools in the Papoose Field.

Northwest of the pool, Gibson & Zanhiser are spudding No. 1 Tecumseh, SE cor. NW SE, Section 16-10-9.

T. B. Slick has completed No. 8 Sands, NE cor. SE SE Section 35-10-9, which made 500 bbls. of oil, and 100 bbls. of B. S. and water from sand 3,349 to 3,369 feet.

The Mid-Continent Petroleum Co. is building a rig for No. 1 Walker, SE cor. SW SW Section 16-10-9; Burke-Gries Oil Co. is building a rig for No. 2 Bruner, NW cor. SE SE Section 16-10-9.

The Mid-Continent Petroleum Co. is building the rig for No. 13 Alexander, C south half north half NW Section 3-9-9; the Transcontinental Oil Co. has the rig on the ground for No. 10 Ogle, NW cor. SE NE Section 4-9-9; the Independent Oil & Gas Co.'s No. 1, NW cor. NW Section 1-9-9, is dry and abandoned at 3,125 feet, and the rig skidded 50 feet south, with the new well No. 1-A is spudded; T. B. Slick's No. 4 Grayson, is dry and abandoned at 3,085 feet, and the rig skidded 50 feet north; T. B. Slick's No. 8 Grayson, is drilling at 290 feet.

The Amerada Petroleum Corp. & E. L. Robinson completed No. 6 Carter, NW cor. NE NW Section 4-9-9, top sand 3,317 feet, first gas 3,319 feet, first oil 3,323 feet, total depth 3,333 feet, good for 35 bbls. an hour.

T. B. Slick's No. 1 Smith-Brooks, SE cor. NW Section 15-9-9, is dry and abandoned at 3,432 feet.

Mid-Continent Petroleum Co. is rigging up No. 1 Walker, SE cor. SW SW Section 16-10-9; Jennings and others have 1,400 feet of fluid in the hole in No. 2 Barnett, SE cor. SE Section 33-10-9, with sand 3,059-3,600 feet; the Carter Oil Co. is drilling an old well deeper in No. 1 Johnson, NW cor. SW SE Section 33-10-9, old total depth is 3,105 feet; the Amerada Petroleum Co.'s No. 1, SE cor. SE, Section 36-10-9, has 23,000,000 feet of gas in broken sand, 2,842 to 2,962 feet; Kingwood Oil Co.'s No. 1 Bruner, SW cor. NE SE Section16-10-9, is drilling at 910 feet; Gibson & Zanhiser are drilling at 823 feet in No. 1 Tecumseh, SE cor. NW SE Section 16-10-9; Burke-Gries Co. has a rig up for No. 2 Bruner, NW cor. SE SE Section 16-10-9; the Indian Territority Illuminating Oil Co. is building the rig for No. 2 Anderson, NE cor. NW SW Section 1-9-9; the Independent Oil & Gas Co.'s No. 1-A Bruner, NW cor. NW Section 1-9-9, is drilling at 723 feet, this is a twin well; T. B. Slick's No. 4-A Grayson, NE cor. SW Section 3-9-9, is drilling at 715 feet, this is a twin well; T. B. Slick's No. 8 Grayson, SE cor. NE SW Section 3-9-9, is drilling at 620 feet; the Transcontinental Oil Co. is building a rig for No. 10 Ogle, NW cor. SE NE, Section 4-9-9; Independent Oil & Gas Co. is drilling at 637 feet in No. 1 Harjo, SE cor. NE Section 16-9-10.

Okmulgee District

The Sheridan Oil Co. has a machine on the ground for No. 1, NE cor. SE NE Section 4-15-11.

The Anglo-Texas Oil Co.'s No. 5 Coleman, CSE SE SW, Section 29-15-11, is dry at 3,024 feet.

C. F. Noble has completed a light gas well in No. 2 Haines, SE cor. NE SE Section 19-15-12, with sand 1,050-1065 feet, and the well is completed for 3,000,000 feet of gas. Olean Petroleum Co. has built the rig for No. 2 Haines, SE cor. SW SE Section 11-15-12; and for No. 3 Haines, SW cor. SE SE Section 11-15-12; Meridian Oil Co. has put up the rig for No. 1 Escoe, NE cor. SE NW Section 1-15-12; the Western Central Oil Co.'s No. 1 Jerry, NE cor. SE NW Section 11-15-12, is drilling at 450 feet.

Near Bald Hill

Kirkland & Sons have a failure in No. 1 NE cor. SE Section 17-15-13, which is dry and abandoned at 2,561 feet.

The Papoose Oil Co. and Swindler have a machine on the ground for No. 22, CWL SW SE Section 21-15-14.

West of Okmulgee

The Atlantic Oil Producing Co.'s No. 3 Fisher, SE cor. SW SE Section 36-12-10, is spudded, and No. 4 Fisher, SW cor. NW SE Section 36-12-10, is drilling at 1,400 feet. Wood Oil Co.'s No. 1 Thompson, SW cor. SE, Section 14-13-11, is a failure at 2,565 feet; J. A. Swindler has a rig on the ground for No. 2 Lewis, SW cor. NE Section 25-13-11.

Eagle-Picher Co.'s No. 3, CEL NW NW Section 33-13-12, is dry and abandoned at 2,454 feet. The Josey Oil Co. has spudded No. 3 Fields, SE cor. NW NW Section 33-12-11, and No. 2 Fields, SW cor. NW NW Section 33-12-11, is drilling at 850 feet.

Colvin, Smith and others' No. 1 Bird, NW cor. NE NW, Section 5-12-12, has been completed as a 5,000,000-foot gas well, sand 2,303 to 2,322, total depth 2,341 feet.

The Eastern Oil Co. is building a rig for No. 9, NE cor. SE SW Section 25-13-11; A. B. Ice and others' No. 4 Murrel, NW cor. NW Section 26-13-11, is spudded.

South of the new well of the Simms Oil Co., the Aztec Oil Co. is building a rig for No. 12, NE SE Section 36-12-11, a twin to No. 11.

A. D. Morton & Co.'s No. 2 Fisher, CEL SE NW Section 7-12-12, has been completed for 150 bbls. of oil, sand 2,645 to 2,662 feet.

The Independent Oil & Gas Co., King-

(Continued on Page 119)

Kansas Oil Field News

By J. L. Dwyer

The territory around T. B. Slick's wildcat on the western edge of Cowley County seems to look very favorable to the acreage held by the T. B. Slick interests who started operations in this locality. The south offset to the discovery well is owned by the Carter Oil Co. which has a well in the 2,650-foot sand estimated at 1,000 bbls. In this same sand, the discovery well had a splendid showing. The west offset to the discovery well was drilled by Slick and is a dry hole in the Wilcox sand. These facts would appear to make the acreage to the north and east look more favorable than acreage in the other directions.

In the Rainbow Bend Pool, the Waite Phillips-Independent Oil & Gas Co.-Marland Oil Co. interests completed a dry hole about 1¼ miles northwest of production.

Northwest of El Dorado in Butler County, the Phillips Petroleum Co. has a failure in its wildcat test, No. 1 King, SW SE NW, Section 17-24-4, where a dry sand was encountered 2,534-48 feet. The hole is abandoned at this depth.

Greenwood County

The Mid-Kansas Oil Co. has completed two wells, No. 16 Martindale, NW cor. SE SE, Section 31-23-10, which topped the sand at 2,265 feet, and drilled to 2,348 feet, and was shot with 200 quarts. It is good for 200 bbls. The same company's No. 17 Martindale, CSL SW SW SW, Section 31-23-10, has sand at 2,268 to 2,337 feet, and when shot with 120 quarts produced a 50-bbl. well.

The Mid-Kansas Oil Co.'s No. 22 Martindale, NE cor. SW SE, Section 31-23-10, is drilling at 400 feet; Mid-Kansas' No. 25 Martindale, SE cor. SW SE, Section 31-23-10, is a rig; and No. 26 Martindale, SW cor. NE SW, Section 31-23-10, is also a rig.

The Phillips Petroleum Co.'s No. 16 Lewis, SE cor. NW NW, Section 32-23-10, is drilling at 750 feet; Arkansas Fuel Co.'s No. 7 Marshall, CSL NW SE SW, Section 1-24-9, is drilling at 900 feet; Lewis Oil Co.'s No. 4 Heidelton, NW cor. SE, Section 1-24-9, is drilling at 650 feet.

Mission Oil Co. has a rig for No. 7 Thrall, SE cor. NW SW, Section 32-23-10, and also for No. 49 Thrall, C SE, Section 29-23-10, and No. 50 Thrall, C east half SW, Section 28-23-10.

Roth and others' No. 5 Cartwright, SE cor. NE NE, Section 1-24-9, had sand at 2,280 to 2,340 feet, was shot with 100 quarts and is good for 60 bbls. They have a rig on the ground for No. 7 Cartwright, SW cor. NE, Section 1-24-9.

The Prairie Oil & Gas Co. has completed No. 10 Helman, CEL SE NW SW, Section 14-24-9, which had sand at 2,095-2,189 feet, was shot with 140 quarts and is making 203 bbls. Their No. 11 Helman, CWL east half SW, Section 14-24-9, is fishing for tools at 1,000 feet.

Polhamus and others' No. 2 Marshall, CEL SE SW, Section 27-24-9, is dry and abandoned at 2,425 feet.

Mid-Kansas Oil Co.'s No. 11 Ladd,

(Continued on Page 96)

"OILWELL" ESTD. 1862. TRADE MARK. (REGISTERED)

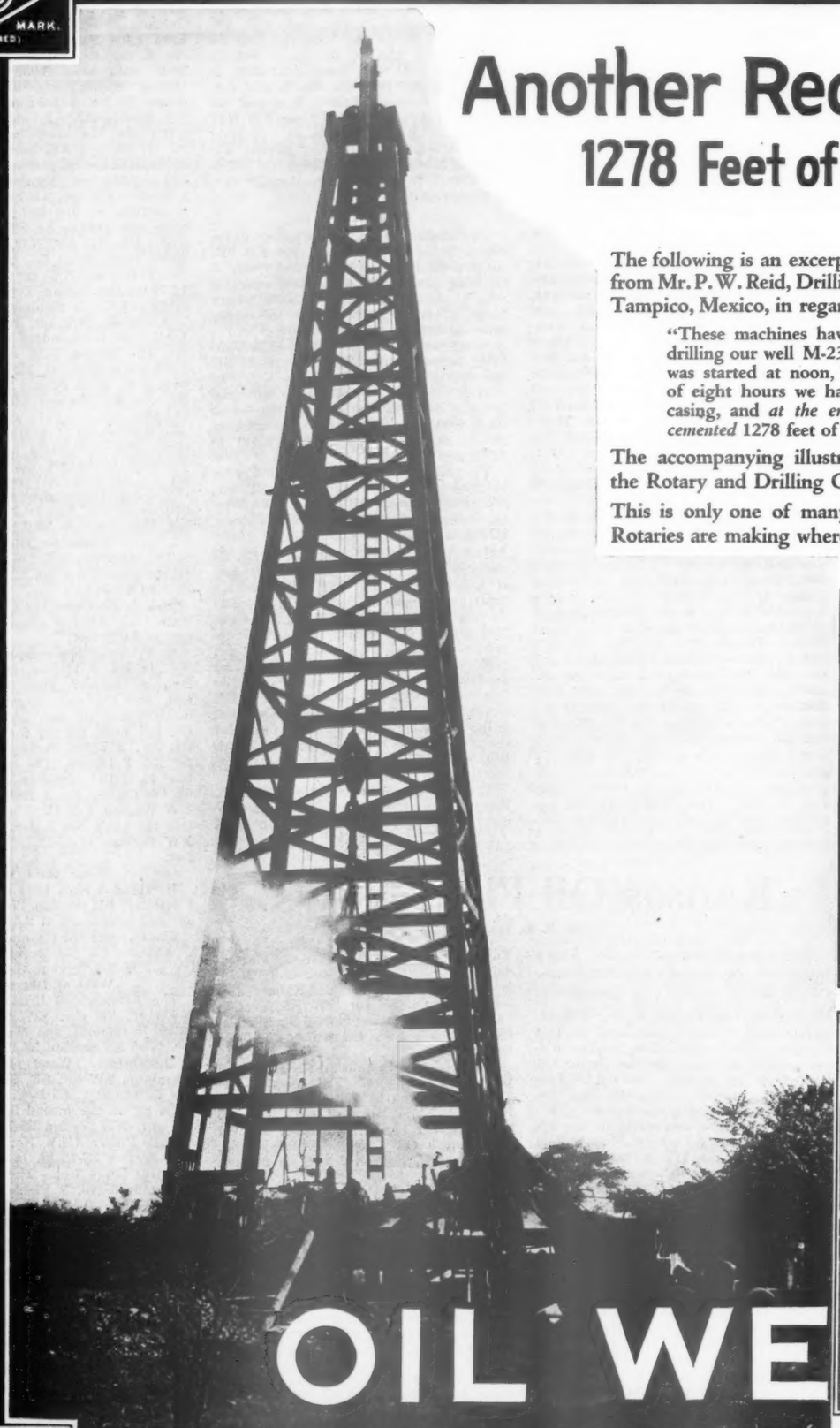
Another Record *for the* "O
1278 Feet of 8¼" Casing Set and

The following is an excerpt from a letter dated Jan. 24, 1925, from Mr. P. W. Reid, Drilling Sup't., of the East Coast Oil Co., Tampico, Mexico, in regard to "OILWELL" Imperial Rotaries:

> "These machines have proven very satisfactory. In drilling our well M-23, Potrero del Zacate, spudding was started at noon, November 26th, and at the end of eight hours we had set 164 feet of 12½" 45 lb. casing, and *at the end of 72 hours* we had *set and cemented* 1278 feet of 8¼" casing."

The accompanying illustrations are actual photographs of the Rotary and Drilling Crew that did the work.

This is only one of many records that "OILWELL" Imperial Rotaries are making wherever rotary drilling is practised.



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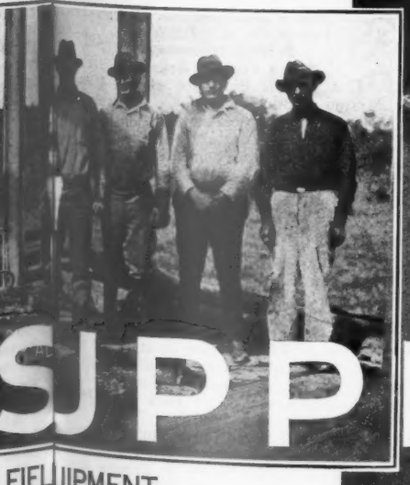
"OILWELL" ESTD. 1862 TRADE MARK (REGISTERED)

"OILWELL" Imperial Rotary
and Cemented in 72 Hours

Another Imperial Rotary, drilling near Houston, Texas, completed a well 5281 feet deep in 57 days. Another Imperial Rotary, near Orange, Texas, drilled 5300 feet, including the setting of 4100 feet of 9″ casing, all in 60 days. Still another Imperial Rotary holds the record for deep drilling in Mexico—4013 feet in 41 days, in Lake Tamiahua, drilling being done in 12 feet of water, five miles from shore.

The "OILWELL" Imperial Rotary will save time and money on your operations just as it is doing for hundreds of others.

Inquire at any of our 100 Branches.



SUPPLY CO.

EQUIPMENT

BRANCH STORES IN ALL OIL FIELDS

"OILWELL" ESTD. 1862 TRADE MARK (REGISTERED)

North Louisiana-Arkansas

By M. L. Vaughn

Rapidly mounting production in deep sand territory of Smackover. Slight declines in Smackover light and Stephens area. Urania Parish development waiting outcome of litigation, but several tests going ahead. Two 30,000-bbl. and one 15,000-bbl. well in Smackover deep sand.

SHREVEPORT, La., April 13.—Rapidly mounting production from the deep sand territory in Smackover has resulted in an average increase per day during the week closing April 11 of 42,045 bbls., actual pipe line runs of heavy crude. The initial production of the new wells brought in during this period was far in excess of this amount, several enormous ushers having been completed during the week, but the flush production seldom lasts more than a few hours and in some cases the wells have sanded up and bridged over before pipe line connections were made.

On Saturday, April 11, 42 wells had been reported from the deep sand area in Smackover, their initial production conservatively estimated at 150,000 bbls. During the last three days of the week there were two 30,000-bbl. and one 15,000-bbl. wells brought in, with at least five or six averaging from 5,000 to 10,000 bbls.

The Imperial Oil & Refining Co. was the first to get a big gusher, its No. 2 Murphy in Section 9-16-15 coming in at 2,448 feet with an initial production estimated at 30,000 bbls. This was followed by the Amerada Petroleum Corp.'s No. 2 Calloway in Section 4-16-15, which blew in at 2,349 feet, making 15,000 bbls., and two wells on The Texas Co.'s Graves lease in Section 3-16-15, with an estimated production of 10,000 bbls. each. The excitement had barely subsided when the Gulf Refining Co.'s No. 14 Hardy-Murphy in Section 4-16-15 came in at 2,352 feet flowing 30,000 bbls. and the latest development at this writing is the Roxana Petroleum Corp.'s No. 1 Hardy-Murphy in Section 9-16-15, which flowed 11,000 bbls. in four hours, and is now doing 4,000 bbls. Most of these wells are flowing clean pipe line oil and the pipe lines are prepared to take whatever oil is offered them with plenty of storage provided by those who have not yet made connections with the pipe lines, but great fear is expressed the local market will be glutted and the price cut to a ruinous figure as in past experiences of this kind. The present price for heavy oil is $1 a barrel, having been cut during the month of March from $1.30 to the present quotation.

Runs During Week

Runs from the Arkansas Field during the past week showed an increase of 41,565 bbls. a day, the big increase in Smackover heavy being cut down a little by slight declines in Smackover light and Stephens. Slight increases were noted also in the El Dorado and Nevada County districts. Total production for the week in Arkansas and Louisiana averaged 223,350 bbls. a day, distributed as follows:

Arkansas

Smackover heavy	128,795
Smackover light	31,225
El Dorado	9,430
Nevada County	1,560
Stephens	1,980
Total	172,990

North Louisiana

Bellevue	3,870
Caddo light	9,770
Caddo heavy	2,245
Cotton Valley	8,220
De Soto and Red River	4,270
Elm Grove	720
Haynesville	14,325
Homer	6,940
Total	50,360
Total both fields	223,350
Increase	40,591

A boiler explosion at Norphlet last week injured nine men, four of whom are so seriously burned that their recovery is doubtful. The explosion occurred when the connection blew off a gas line which was being connected with a boiler and the gas ignited from a blacksmith's forge six feet distant. The men are all in the employ of the Clark & Greer Oil Co. and J. W. Clark was present at the time of the explosion but was uninjured. Those seriously hurt in the accident were P. L. Voss, R. B. Blanchard Moore, W. M. Garland and W. M. Block.

Urania Developments

Interest in the new oil field near Urania in La Salle Parish has been somewhat overshadowed by the sensational development in the deep sand at Smackover, but the development of this territory is progressing steadily and there is every indication that an entirely new producing territory has been added to the oil fields of North Louisiana.

New companies who have purchased acreage in the Urania field for the purpose of immediate development number among them the Standard Oil Co., the Dixie Oil Co., Keen & Woolf, R. A. Allison and others. The first law suit to be entered in connection with the new development was filed at Jena by James Walter Elder, who seeks judgment in the sum of $126,000 from the Urania Petroleum Co. The plaintiff alleges in his petition that Anthony Gibbon, manager of the Urania Petroleum Co., had conveyed or promised to deliver to the plaintiff, leases on three 40-acre tracts in the immediate vicinity of the well; that the value of the said leases was estimated from $1,000 to $2,000 per acre, but that defendant was unable to make delivery of the leases. Notice has been given by attorneys of other suits to be filed as soon as petitions can be drawn up, one of these suits, it is said, involving title to the land on which the discovery well is located.

The little town of Jena, parish seat of La Salle Parish, and 14 miles southeast of the new well, presents a beehive of industry. Every inch of desk space is in use and abstractors are working day and night in an effort to perfect titles to lands on which leases are passing from the hands of owners to prospective developers or speculators.

Winn and Caldwell Parishes, adjoining La Salle on the west and north, are feeling the effects of the boil boom in La Salle and lease hunters are busy for miles around, taking up leases in anticipation of the demand which they believe will follow the immediate development of the new field.

Oil in Shelby County, Texas

Shelby County, Texas, is again in the limelight as a prospective oil territory, the Crusader Oil Producing Co. having acquired leases on some 5,000 acres, near Center, and entered the field for development.

Several years ago this same land was leased by the Cathcart-Texas Oil Co., composed of Ohio capitalists, and a well drilled to 2,900 feet, tested dry and abandoned. Recently, it was discovered the well was standing 1,300 feet in oil and after careful investigation and favorable geological reports, the Crusader interests decided to take up the leases which had been allowed to lapse, paying $1 an acre and agreeing to drill one or more wells on the property.

The Holt well, drilled by the Cathcart-Texas company, lies about 15 miles southwest of the Bethany gas field and the same distance east of the Nacogdoches shallow oil territory, it is considered very probably a good producing sand will be located in this territory. The Texas Co. at one time had four wells in Shelby County having a combined production of 100 bbls. a day, but it has been several years since there was any real development in this territory.

Ask State Land Leases

The State Land Office at Baton Rouge, La., is being besieged with applications for leases in De Soto, Caddo and La Salle Parishes in North Louisiana, and Lafayette and St. Martin Parish in the south end of the State. Drilling campaigns and the prospect of new oil pools have emphasized the desirability of State lands in these territories and efforts are being made to secure leases of the water beds along the various lakes and bayous running through these districts. The Governor has authority to grant leases on lands owned by the State, but the law provides that before such lands are leased the State Register of Lands shall inspect the property and that it shall be advertised for at least 15 days prior to the opening of the bids, giving a brief description of the land to be leased and the terms of the lease.

Completions—Union County, Arkansas

The completion of nine wells in the deep sand in the Smackover Field added 18,000 bbls. to the rapidly increasing output of the deep sand development.

The Gulf Refining Co. completed No. 2 T. C. Murphy, in Section 9-16-15, flowing 8,000 bbls., at 2,383 feet. The well is flowing clean pipe line oil and is the best well that has just been completed in the deep sand.

The Lion Oil & Refining Co. completed No. 7 Gray, in Section 3-16-15, flowing 2,500 bbls. at 2,362 feet.

The Mazda Oil Co.'s Lawton B-1, Section 10-16-15, is flowing 1,000 bbls. at 2,450 feet, and its Lawton D-1, in the same section, is flowing by heads at the rate of 500 bbls. per day at 2,429 feet.

The Ohio Oil Co. completed No. 6 Pate, Section 10-16-15, flowing 1,500 bbls. at 2,389 feet, clean pipe line oil.

The Ray Drilling Co.'s No. 2 Tatum, Section 7-16-15, formerly completed at 2,029 feet an 80-bbl. pumper, was deepened to 2,406 feet and is flowing 800 bbls.

The Shreveport Oil Corp. completed Murphy A-1, Section 9-16-15, flowing 1,200 bbls. at 2,418 feet.

The Unity Petroleum Co.'s No. 7 Roper, Section 3-16-15, is flowing 2,000 bbls. at 2,369 feet.

Wells completed in the shallow sand numbered three, with an initial production of 170 bbls.

The Gulf Refining Co. completed No. 38 L. Werner, Section 5-16-16, pumping 75 bbls. at 2,253 feet.

Hollyfield and others completed No. 8 Giller, Section 10-16-15, flowing 250 bbls. at 2,402 feet, and No. 9 Giller, same section, pumping 45 bbls. at 1,999 feet.

The Ohio Oil Co. completed No. 3 Ballard, Section 14-16-15, pumping 50 bbls. at 1,982 feet.

Rogers and others abandoned No. 2 LeCroy, Section 17-16-15, at 2,093 feet.

Ouachita County

Completions in the Ouachita County area of the Smackover Field numbered 11, with two failures and nine producers, having an aggregate initial production of 2,985 bbls.

Ellis & Dumas completed No. 5 Forest City Box Co., Section 31-15-16, pumping 125 bbls. at 2,265 feet.

J. M. Hughes completed No. 2 Reeves, Section 28-15-16, pumping 80 bbls., 50 per cent water and b.s., at 2,258 feet.

The Humble Oil & Refining Co. completed No. 7 Umstead, Section 5-16-15, in the new deep sand area, flowing 1,000 bbls. at 2,360 feet. Another well in the deep sand was completed by the Marine Oil Co., its No. 5 Umstead, Section 5-16-15, flowing 1,500 bbls. at 2,352 feet.

Hunt and others completed Halton B-8, Section 26-15-17, pumping 60 bbls. at 2,370 feet; B-9, in the same section, pumping 75 bbls. at 2,387 feet, and No. 2 Street, Section 26-15-17, pumping 50 bbls. at 2,385 feet.

J. D. Reynolds completed No. 1 Berg, Section 25-15-17, flowing 20 bbls. at 2,362 feet.

The Southern Oil Co.'s No. 1 Hoffman, Section 22-15-17, tested dry and was abandoned at 2,425 feet.

The Sun Oil Co.'s No. 5 Hardin, Section 27-15-16, is swabbing 75 bbls. at 2,255 feet.

White and others got salt water in No. 1 Riley, Section 23-15-17, and the well was abandoned at 2,394 feet.

Cotton Valley

There were five wells completed in the Cotton Valley district during the week, one failure and four producers, adding 415 bbls. to the output of this district.

M. J. Derryberry completed Smith A-1, Section 29-21-10, pumping 100 bbls. at 2,579 feet.

The Humble Oil & Refining Co. completed Bodcau B-15, Section 28-21-10, pumping 100 bbls. at 2,575 feet, and No. 4 Gray, Section 26-21-10, pumping 200 bbls. at 2,528 feet.

The Ohio Oil Co.'s No. 25 Bodcau in Section 28-21-10, is pumping 115 bbls. at 2,577 feet.

Caddo Parish

William Gross and others completed No. 3 Rives in Section 5-20-16, on the north shore of Caddo Lake, flowing 30 bbls. at 1,849 feet.

Ouachita Parish

The Southern Carbon Co. completed No. 46 fee, Section 31-19-5e, making 4,500,000 feet of gas at 2,221 feet.

Columbia County, Arkansas

The Magnolia Petroleum Co. has abandoned No. 1 Phil Lindsay, Section 30-18-19, testing dry at 3,112 feet.

Drilling Operations

Union County, Arkansas

J. A. Alphin is rigging up No. 1 fee, Section 4-16-15; Amerada Petroleum Corp. set 6-inch casing at 2,338 feet in No. 2 Calloway, Section 4-16-15; two rigs running in this section; derricks up for Nos. 5 and 6 Flenniken, Section 6-16-15; whipstocked at 1,846 feet in No. 1 Lyell, Section 3-16-15, and drilling at 1,856 feet; drilling at 1,745 feet in No. 5 Lyell, Section 3-16-15, and derrick up for No. 6 Lyell, same section.

Arkansas Fuel Oil Co. has derricks up for No. 5 Ferguson, Section 6-16-15, and No. 5 Alphin, Section 11-16-15; set 10-inch casing at 201 feet in No. 3 Murphy, Section 8-16-16; waiting on standard rig with 9 feet of sand in the hole at 2,209 feet in No. 1 Scott, Section 1-16-17; will deepen with tools from 2,259 feet No. 2 Scott, same section.

Arkrado Oil Co. is arraning to cement hole at 2,562 feet in No. 5 Hatfield, Section 7-16-15; Bailey & Trimble are drilling at 60 feet in No. 3 Lawton, Section 10-16-15; Barnsdale & Foster are drilling at 2,302 feet in No. 4 J. Murphy, Section 17-16-15; Bradley & Cazart are drilling at 2,367 feet in No. 1 Pate, Section 16-17-17.

Broderick & Calvert are arranging to deepen from 2,082 feet No. 3-A Murphy,

"Better Than a Steam Rig"

That is what the men who have used both have to say about the *Bessemer 45* Drilling Engine. It does the work faster. It is cheaper to operate. It is easier to transport. Each of these facts makes for lower drilling cost.

The *Bessemer 45* consists of a two cylinder enclosed crankcase gas engine and special drilling clutch. The engine is built with crosshead construction, exceptionally heavy reinforced bed, forged steel crankshaft, extra large, easily adjustable bearings, *cast steel* fly wheels and combination improved force-feed and splash lubrication.

The clutch is smooth running and noiseless and built to stand the hard service required of a drilling engine. It uses six large friction shoes with large clearance, has split hub clutch spider, machine-cut steel gears and phosphor bronze bushed bearings.

The complete unit permits unusual drilling economy and will stand the toughest kind of field service.

THE BESSEMER GAS ENGINE COMPANY
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BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

Section 8-16-15. This well was formerly completed October 4, 1923, pumping 200 bbls. J. W. Clark has derrick up for No. 6 Cook, Section 17-16-15; drilling sand at 2,350 feet in No. 3 Palmer, Section 9-16-15; drilling No. 2-A Wells, Section 15-16-15, at 2,310 feet.

Coates & Sowell are drilling at 2,360 feet in No. 1 Bilyew, Section 8-16-16; drilling at 1,830 feet in No. 2 Bilyew, same section; Sam Cook is trying to kill water flow at 2,380 feet in No. 1 Murphy, Section 9-16-15; Crawford & Sebastian drilled plug at 2,333 feet in No. 5 Graves, Section 3-16-15; set 6-inch casing at 2,350 feet in No. 6 Graves, same section, and drilling No. 6 James, Section 6-16-15, at 805 feet.

Crusader Oil Producing Co. will lubricate No. 5 Graves, Section 3-16-15; this well was estimated at 20,000,000 feet of gas, with spray of oil, and 12 feet of sand in the hole at 2,380 feet; set 10-inch casing at 500 feet in No. 7 Graves, Section 3-16-15, and drilling at 750 feet.

H. L. Dale set 10-inch casing at 501 feet in No. 2 LeCroy, Section 17-16-15, and drilling at 900 feet; Doern and others are waiting orders at 2,512 feet in No. 1 Bradley, Section 4-19-16; Eason and others are fishing five joints of drill stem and bit at 2,075 feet in No. 1 Palmer, Section 9-16-15; drilling No. 2 Palmer, same section, at 1,934 feet; No. 3 Palmer at 1,927 feet and set 10-inch casing at 508 feet in No. 4 Palmer, same section, and drilling at 1,600 feet.

Federal Petroleum Co. is drilling No. 4 Childs, Section 8-16-16, at 1,410 feet; has drill stem stuck at 2,359 feet in No. 5-J Flenniken, Section 6-16-15; drilling No. 7-A Lawton, Section 10-16-15, at 1,745 feet.

W. H. Gilliland is waiting on standard rig with 6 feet of sand in the hole and 1,500 feet of oil at 2,260 feet in No. 2-A Hodges, Section 8-16-16; Grimes & Jones set 10-inch casing at 61 feet in No. 4 Van Hook, Section 7-18-14.

Gulf Co. Operations

Gulf Refining Co. is drilling sand rock at 2,305 feet in No. 8 J. H. Alphin, Section 10-16-15; drilling sand rock at 1,990 feet in No. 9 J. H. Alphin, same section; arranging to move No. 6 Berry, Section 8-16-15, over. Water shut in and abandoned at 1,835 feet; rigging up No. 7 Berry, and derrick up for No. 8 Berry, Section 8-16-15; drilling No. 9 Flannigan, Section 5-16-15, at 2,034 feet; set 6-inch casing at 2,225 feet in No. 2 Halloway, Section 6-16-16; drilling at 2,004 feet in No. 5 LeCroy, Section 16-16-15; set 10-inch casing at 305 feet in No. 6 LeCroy, Section 16-16-15; set 6-inch casing at 2,343 feet in No. 14 Hardy-Murphy, Section 4-16-15, and drilling at 2,346 feet; set 10-inch casing at 312 feet in No. 5 Hardy-Murphy, same section, and drilling at 500 feet; set 10-inch casing at 305 feet in No. 16 Hardy-Murphy, same section, and rigging up No. 13 H. Murphy, Section 3-16-15; set 10-inch casing at 301 feet and drilling at 990 feet in No. 11 T. C. Murphy, Section 9-16-15; cored red sand at 3,254 feet in No. 31 L. Werner, Section 5-16-16.

Hickman and others tested salt water and set 4-inch casing at 2,360 feet in No. 9 Graves, Section 3-18-15; milled on back-up tongs at 2,370 feet in No. 10 Graves, Section 3-18-15; Hollyfield and others are arranging to deepen No. 3 Giller, Section 10-16-15, from 1,994 feet; (formerly completed August 23, 1923, swabbing 500 bbls.); rigging up No. 10 Giller, Section 11-16-15.

Houston Oil Co. set 8-inch casing at 2,388 feet in No. 5 Miller, Section 3-16-15; set 6-inch casing at 2,637 feet in No. 1 Parks, Section 8-16-16; Humble Oil & Refining Co. pulled dry in while setting 6-inch casing at 2,382 feet in No. 4 Flenniken, Section 3-16-15, and drilling at 2,393 feet; set 6-inch casing at 2,459 feet in No. 2-B A. Flenniken, Section 9-16-15; set 10-inch casing at 476 feet in No. 3-B A. Flenniken, same section, and drilling at 1,575 feet; two rigs running in Section 9-16-15; drilling lime rock at 1,815 feet in No. 7 Pate, Section 10-16-15; rigging up No. 3 B. Goodwin, Section 3-16-15.

Imperial Oil & Gas Producing Co. set 6-inch casing at 2,412 feet in No. 2 Murphy, Section 9-16-15; set 6-inch casing at 2,402 feet in No. 3 Murphy, same section, and formed crater and derrick is down; set 10-inch casing at 495 feet in No. 4 Murphy, Section 9-16-15, and drilling at 2,056 feet; derrick up for No. 5 Murphy, and drilling No. 6 Murphy, all in Section 9-16-15, at 1,205 feet.

Johnson Drilling Co. set 6-inch casing at 2,237 feet in No. 1 Anderson, Section 1-16-17; E. M. Jones set 10-inch casing at 484 feet, and drilling at 1,510 feet in No. 1 Cook, Section 16-16-15; No. 2 Cook, same section, blowing out lots of gas, salt water, mud and rocks at 2,210 feet; set 10-inch casing at 408 feet in No. 3 Cook, same section, and drilling at 415 feet.

Jones & Ganzell are drilling at 2,501 feet in No. 1 Murphy, in Section 38-19-14; Keene & Wolf are lubricating No. 1 J. S. Murphy, Section 9-16-15, and arranging to set 4-inch casing at 2,424 feet; drilling No. 2 Murphy at 1,060 feet, same section.

Kinnebrew and others are reaming to bottom from 2,050 feet in No. 5 Williams, Section 3-16-15; Laurel Oil & Gas Co. set 10-inch casing at 258 feet in No. 1 Houston, Section 12-16-15; Liberty Oil Co., drilling No. 1 Davis, Section 31-16-14, at 2,502 feet.

Lion Oil & Refining Co. has derrick up for No. 1-A Bilyew, Section 8-16-15; and for No. 3 Hays, Section 4-16-15; set 10-inch casing at 484 feet in No. 5-A Lawton, Section 10-16-15; drilling No. 3 D. Murphy, Section 8-16-15, at 2,050 feet; rigging up Nos. 1-E Murphy and 2-E Murphy, Section 8-16-15; set 10-inch casing at 480 feet in No. 1-G Murphy, Section 8-16-15; derrick up for No. 2-G Murphy, same section. Lyles and others have two rigs running, Section 3-16-15.

Magnolia Operations

Magnolia Petroleum Co. has derricks up for Nos. 5 Campbell, Section 13-16-17, and No. 2 Scott, Section 12-16-17; drilling lime at 2,112 feet in No. 1 Chandler, Section 4-19-14; tested No. 1 Freeman, Section 7-16-16, and it was dry at 2,315 and 2,321 feet; now drilling at 2,575 feet; drilling No. 3 Harris, Section 16-16-16, at 2,638 feet; drilling at 2,425 feet in No. 4 Powell, Section 19-16-15; set 10-inch casing at 203 feet in No. 2 Stout Lumber Co., Section 1-16-17, and drilling at 1,050 feet.

Mazda Oil Co. has derrick up for No. 2-B Laaton, Section 10-16-15; McCorkle and others drilling at 640 feet; R. J. McMurray is rigging up No. 1 Hill, Section 5-16-15; Murdock and others are fishing for bit at 2,010 feet in No. 4 Bilyew, Section 8-16-15; O. G. Murphy set 6-inch casing at 2,418 feet in No. 2 Murphy, Section 9-16-15, and drilling at 2,436 feet; drilling No. 3 Murphy, same section, at 2,300 feet.

Natural Gas & Petroleum Co. have nine rigs running in Section 9-16-15; two rigs running in Section 8-16-15, two rigs running in Section 5-16-15, and have derrick up for No. 2 Stacey-Lawton, Section 9-16-15.

Noco Petroleum Co. sold the lease on which its No. 2 Flenniken, Section 5-16-15, was located and moved the rig away; Ohio Oil Co. set 6-inch casing at 2,400 feet in No. 3 S. Murphy, Section 9-16-15, and have two other rigs running in this section; Page and others set 6-inch casing at 2,445 feet in No. 5 Murphy, Section 7-16-15; and derrick up for No. 6 Murphy, same section; Parrish and others have derrick up for No. 3 Ferguson, Section 6-16-15.

Penguin Oil Co. has derrick up for No. 3 Sandford, Section 6-16-15; Phillips Petroleum Co. is rigging up No. 5 Alphin, Section 11-16-15, and drilling at 1,980 feet in No. 8 Giller, Section 10-16-15; Pure Oil Co. is drilling at 110 feet in No. 2 Bilyew, Section 8-16-15; arranging to set a short string of 2-inch casing at 2,480 feet in No. 1 Dumas, Section 16-16-15.

A. H. Ramage is drilling at 2,055 feet in No. 2 Cook, in Section 16-16-15; set 4-inch casing at 2,394 feet in No. 7 James, Section 6-16-15, and reaming to set 6-inch casing at 2,380 feet in No. 4-C Lawton, Section 10-16-15; Ray Drilling Co. is arranging to deepen No. 3 Tatum, Section 7-16-15, from 2,029 feet, formerly completed March 30, 1924, pumping 80 bbls. per day.

Sam Richardson is drilling at 2,105 feet in No. 3 Lawton, Section 10-16-15; Rogers and others are arranging to deepen No. 1 LeCroy, Section 17-16-15, from 2,119 feet, formerly completed April 9, 1924, swabbing 90 bbls.; rigging up No. 3 LeCroy, same section.

Roxana Work

Roxana Petroleum Corp. has six rigs running in Section 9-16-15; made location for No. 1-A A. Flennigan, in Section 10-16-15; set 20-inch casing at 20 feet in No. 1-B A. Flennigan, Section 5-16-15; drilling lime rock at 2,215 feet in No. 2-B Flenniken, same section; sidetracking four joints of drill stem at 2,315 feet in No. 2-A C. Flenniken, Section 10-16-15; set 12-inch casing at 476 feet in No. 2-C Flenniken, Section 8-16-15, and drilling at 1,040 feet; drilling No. 3-C Flenniken, same section, at 383 feet and rigging up No. 4-C Flenniken, same section; tested dry at 2,424 feet No. 2 T. D. Murphy, Section 7-16-15, and cored at 2,429 feet, passing up some sand at 2,378 feet. Now think this sand carried the oil.

Russell and others lost hole and skidded derrick over 20 feet for No. 1 Brown, Section 8-17-14; Simms Oil Co. abandoned No. 1 Cook, Section 16-16-15, and skidded derrick over 25 feet; set 6-inch casing at 2,342 feet in No. 4 Cook, same section, and derrick up for No. 6 Cook, same section; Smitherman-McDonald, waiting on standard rig with 45 feet of sand and 400 feet of oil in the hole at 2,026 feet in No. 1 Hicks, Section 23-16-16.

Standard Oil Co. of Louisiana is drilling at 1,755 feet in No. 18 J. H. Alphin, Section 3-16-15; set 10-inch casing at 306 feet in No. 20 J. H. Alphin, and drilling at 500 feet; drilling No. 3 M. W. Hardy, Section 9-16-15, at 300 feet; drilling No. 5 M. W. Hardy, Section 4-16-15, at 1,972 feet through broken sand; taking core at 2,321 feet in No. 6 M. W. Hardy, same section; derrick up for No. 7 M. W. Hardy, same section; rigging up No. 21 M. W. Hardy, Section 10-16-15, and derrick up for No. 25, M. W. Hardy, Section 4-16-15; drilling gas sand at 2,275 feet in No. 25 McClanahan, Section 6-16-15.

Staves and others are drilling No. 1 Cook, Section 16-16-15, at 1,710 feet; D. N. Stewart is fishing five joints of drill stem at 2,096 feet in No. 1 Murphy, Section 9-16-15, and drilling No. 2 Murphy, same section, at 1,985 feet; Sun Oil Co. is drilling at 2,153 feet in No. 5 Hatfield, Section 6-16-15; 6-inch casing stuck at 2,075 feet in No. 3 Hays, Section 3-16-15; cemented 4-inch casing through 19 joints of 6-inch at 2,358 feet; Sun Oil Co. is drilling at 1,220 feet in No. 8 Hays; drilling No. 9 Hays at 30 feet, and rigging up No. 10 Hays, all in Section 3-16-15.

Sunny Jim Oil Co. set 6-inch casing at 2,433 feet in No. 4 Flenniken, Section 9-16-15; set 6-inch casing at 2,486 feet in No. 5 Flenniken, and drilling at 2,494 feet; drilling No. 6 Flenniken at 1,360 feet, all in Section 9-16-15.

Sure Oil Co. drilling at 2,310 feet in No. 4 Flenniken, Section 5-16-15; rigging up Nos. 5 and 6 Flenniken, same section.

The Texas Company has five rigs running in Section 3-16-15; eight rigs running in Section 4-16-15; Tidal Osage Oil Co. set 12-inch casing at 501 feet in No. 5 Vestal, Section 17-16-15; United Central Oil Corp. is drilling at 2050 feet in No. 4 Murphy, Section 8-16-15; Unity Petroleum Co. has temporarily abandoned at 2,363 feet No. 6 Roper, Section 3-16-15; set 10-inch casing at 510 feet in No. 8 Roper, same section, and drilling at 825 feet; rigging up No. 9 Roper and building derrick for No. 10 Roper, all in Section 3-16-15.

Wetherbee and others have derrick up for No. 1 McGraw, Section 7-16-16; Nye Wilson cemented 6-inch casing at 2,335 feet in No. 5 Hays, Section 4-16-15, and lost casing seat, cored down to 2,344 feet, with 3 feet of sand, and will set 5-inch casing at 2,344 feet.

Drilling Operations, Ouachita County

Drilling activity in Ouachita County has increased almost in the same proportions as in the Union County area of Smackover, especially in the east end of the field which extends down into the deep sand territory. At the end of the week, there were 93 drilling wells in Ouachita, with 12 waiting for standard rig to pump, 22 derricks and 11 rigging up to drill.

Among the new wells in the deep sand area, the El Dorado Union Oil Co. is down 950 feet in No. 2 Umsted, Section 4-16-15; the Humble Oil & Refining Co. has wells drilling on the Berg, Flannigan, Murphy and Umsted leases, in Sections 3, 5, 6 and 30-16-15, and Invaders Oil Co. is rigging up to drill No. 5 Miller, Section 5-16-15.

Leon and others have five rigs running and one derrick on the Berg land, Section 4-16-15; Roxana Petroleum Corp., has three rigs on the Umsted, Section 4-16-15; Standard Oil Co. is rigging up to drill No. 11 and No. 13 M. W. Henry, Section 5-16-15; Sid Umsted is down 350 feet in No. 1 fee, Section 4-16-15, and Woodley Petroleum Co. has two rigs running and one derrick on the Umsted lease, Section 4-16-15.

George & Jones are drilling at 2,220 feet in No. 2 Umsted and has set 6-inch in No. 4 and No. 5, Section 4-16-15; Gulf Refining Co. has derrick up for No. A-6 Goodwin, Section 5-16-15, and drilling at 2,233 feet in No. 13 Hardy-Murphy, Section 4-16-15; Holloway and others have 1,000 feet of fluid in the hole and arranging to pump No. 1 Murphy, Section 2-16-15, at 1,978 feet, and Houston Oil Co. is coring dry sand at 2,397 feet in No. 6 Hinton, Section 5-16-15, and sandy shale at 2,400 feet in No. 10 B. T. Laney, Section 31-15-15.

Howell and others set 4½-inch casing at 2,360 feet in No. 2 Williams, Section 3-16-15; Lion Oil & Refining Co. is down 1,200 feet in No. 2 Hays and has der-

(Continued on Page 94)

East Central Texas

By Staff Correspondent

CORSICANA, Tex., April 11.—The important test of Penn, the Humphreys-Boyd Oil Co., Texas & Pacific Coal & Oil Co. and others on the Murphy farm, Gardner survey, Henderson County, looked at the close of the week like a complete disappointment. It had sand at 3,155-56 feet; a sandy shale at 3,156-65 feet; broken sand at 3,165-69 feet and solid sand at 3,169-70 feet. A core was taken at 3,166-71 feet, which showed salt water and it was the intention to drill the well deeper.

Cranfil & Springer's test on the Springer farm, Gardner survey, in Henderson County, was drilling at 3,125 feet in sticky shale.

Cranfil and others' test on the Duff farm, Barbo survey, in Kaufman County, was drilling in shale at 3,050 feet.

Wortham Completions

In the Wortham Field, Freestone County, the Texas Co.'s No. 5 S. T. Bounds, Longbotham survey, made a 250-bbl. initial producer from sand at 2,962-78 feet. The Humble Oil & Refining Co.'s No. 12 Dodd, Ritchie survey, started at 125 bbls. from sand at 3,002-25 feet. The same company's No. 16 Dodd was a 250-bbl. well at 2,990-3,030 feet. In the Limestone County end of the field, the Magnolia Petroleum Co.'s No. 26 N. B. Boyd was a 100-bbl. well at 3,012-20 feet and the Pure Oil Co.'s No. 10 Boyd swabbed 200 bbls. the first 24 hours from sand at 3,003-18 feet.

In Navarro County

A. Patrick's test on the Roberts farm, Mayo survey, was abandoned at 1,595 feet. The Sun Oil Co.'s No. 1 E. L. Swink, Hudson survey, was a 20,000,000-foot gas well from sand at 2,940-85 feet and was shut in. The Humphreys-Boyd Oil Co.'s No. 10 Webb, White survey, Richland Field, started at 90 bbls., 19 per cent water, at 2,941-64 feet.

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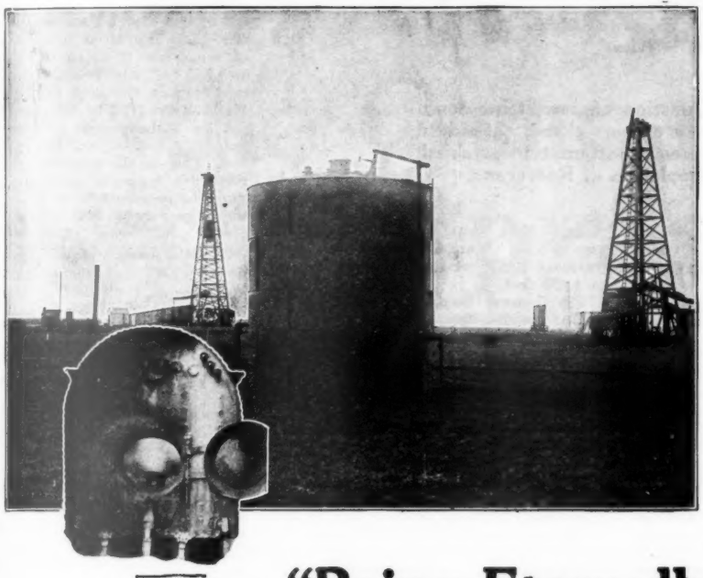

Here is close-up of a Perfection Vapor Pressure Flow Tank which in addition to scrubbing oil from the gas is firing the lease boiler shown in the background. The inset is the front of the boiler. This picture was taken in the Duncan field. Name of company on request.

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California Field Operations

By L. P. Stockman

Associated Oil Co. starts test at Seal Beach. Question of permitting town lot drilling agitating real estate men and property owners there. Standard abandons test at Rideout Heights while Shell gives up attempt to establish another field northwest of Long Beach. One completion at Rosecrans.

LOS ANGELES, Calif., April 11.—The Associated Oil Co. lost very little time in starting work at Seal Beach after leasing the Hellman property and at present has a rig up for its first hole. A steel rig has been erected and the necessary roads and tankage are being carried to completion as quickly as possible. The bit will probably be started on its way down to the pay expected around 4,700 feet within the next week or 10 days. The Shell did not make any progress with either No. 2 Bryant or No. 3 Bryant during past several days, as both are held up with mechanical trouble. The former has been carried down to 4,409 feet, while the log showed No. 3 at 4,170 feet. No. 1, the discovery well, furnishing fuel for the company's operations in this area, is doing 65 bbls. a day. No. 1 Bixby, a water well, has been plugged back from 6,142 feet to 4,554 feet.

Shell officials, while quite interested in the operations of the Associated, are watching developments in the town lot section more closely since the company has considerable acreage leased up in that area. There is an anti-drilling clause in some of the real estate subdivisions and a city ordinance prohibiting drilling within the incorporated limits of the city. The only way that property having an anti-drilling and reversion clause can be opened up for development is by mutual consent of the property owners. One objection can hold up work and this complicates matters somewhat. It has been proposed that the city drilling restriction covering lots without an anti-drilling clause be submitted to a vote of the people and, while real estate brokers are opposing it the community may have a chance to express its wishes in the matter by way of the ballot box.

The opposition has been so strong in the past that it was taken for granted that the town lot section would not be opened up for drilling. It is believed that some of the subdivided property will be productive if drilled, in fact Shell geologists are of the opinion that the most promising area underlies the restricted district. Those opposed to lifting the restrictions cite conditions in Long Beach and Huntington Beach, where streets have been torn up and the area otherwise unfitted for residential purposes.

This, of course, together with the selfish position assumed by those just outside the apparently productive town lot area, is creating a rather hostile attitude among the factions involved. Unless the town lot area is opened up for drilling the Associated will practically have the field to itself. If this company's first well, however, proves to be a big one, a determined effort will be made by those holding surrounding acreage to lift the drilling ban.

Ventura

The Shell put No. 7 Gosnell, in the Ventura Avenue Field on a production test at 4,821 feet, but a shut-off had not been effected and another cement job will be necessary. The output cut about 65 per cent water. No. 8 is also experiencing water trouble and a cement plug is being put in bottom at 5,018 feet. No. 9, in the oil sand at 4,330 feet, is being reamed preparatory to landing a string of 6¼-inch. No. 5 is being tubed at 4,011 feet, while No. 6 is standing cemented at 4,313 feet. Nos. 10, 11, 14 and 15 are just getting under way. On the Edison lease, Nos. 3 and 4 have just been spudded in, while No. 8 Taylor is testing at 2,837 feet.

The General Petroleum picked up a light showing of gas in No. 6 Notten at 4,080 feet and this hole should, barring unforseen delays, be on production within the next 30 days. No. 4-A Barnard, replacing No. 4, lost because of mechanical trouble, is drilling ahead at 746 feet. The Associated only has one hole in a position to make an early production test, although two others are drilling steadily ahead. The company's first completion should be No. 17 Lloyd, now at 4,630 feet, while No. 18 at 3,855 feet and No. 15 at 2,003 feet should follow some time later. A rig has been erected for No. 22 Lloyd but the hole has not yet been spudded in.

Rosecrans

One new producer was finished at Rosecrans during the past week and, although the initial output was unusually small, the flow may increase as the well cleans itself out. The latest completion was No. 4 Rosecrans of the Barnsdall Oil Co., which made a previous bid for production a short time ago. The finishing depth was 4,404 feet, the oil string being a 4½-inch carrying 400 feet of 100-mesh screen. The maximum output, 122 bbls. per day, tests 40.9 degrees and shows a cut of 3 per cent. The completion of this hole leaves the Barnsdall with but one remaining driller, No. 5 Rosecrans, at 3,775 feet, although some corrective work is being done on No. 1 O'Dea at 4,781 feet and No. 2 O'Dea, drilled to 4,218 feet. Rigs have been standing for some time for Nos. 4 and 5 on this lease, but the company has not yet spudded either in. The Associated is having a hard battle with No. 1 Hoge and No. 2 Wanka, neither of which has yet been put on production. The former is held up with a fishing job after being successfully plugged back from 5,002 feet to 4,360 feet. No. 2 Wanka developed bottom water at 4,383 feet and has been plugged to 4,185 feet.

The General Petroleum, following the loss of the first two holes on its Vaughn lease, is making excellent headway with the substitutes, No. 1-A Vaughn at 4,150 feet and No. 2-A at 3,738 feet. No. 1 Amestoy, the deepest well in the field, at 6,737 feet, is still causing the company some trouble and can not yet be classified as a finished producer, although some oil has been produced. Considerable difficulty is being experienced in keeping the well on the pump for any length of time. The Petroleum Midway has started swabbing two prospective producers, No. 1 McCormick at 4,963 feet, and No. 2 Folsom at 5,217 feet and should determine within a short time whether these holes will prove commercially profitable. No. 1 Baskin is in the oil sand at 5,351 feet and, while No. 1-A Ducommon has not yet reached the pay, it should do so shortly. No. 1 Fox, at 4,633 feet, is not yet deep enough, while No. 1 Kreitz is being delayed with mechanical trouble. The Pan American spudded in No. 2 Anderson and is going ahead at present around 750 feet. The company decided that nothing was to be gained by drilling an offset to No. 1 Leonis of the Shell at 5,525 feet, and suspended operations on No. 1 Anderson at 4,397 feet a week or two ago.

Outpost Not Promising

The Standard's outpost, in the northeastern part of the field, No. 1 Cowan, is going ahead at 6,286 feet with only a small chance of securing production. The company may, however, pick up the Amestoy sand found by the General Petroleum at 6,737 feet. No. 1 Trust, of the Union, offsetting the General Petroleum's No. 1 Amestoy, is drilling ahead at 6,165 feet with the prospect of being obliged to go to at least 6,650 feet before being in a position to make a test. No. 1 Gordon, in the extreme southwestern front, has been recemented at 6,596 feet, at which depth a few colors were found. In addition to these, the Union is working with eight holes on the Howard Park lease and has five additional rigs standing. No. 1 Zins has been plugged back from 5,736 feet to 5,675 feet, at which depth a test should be made during the coming week. A string of 8¼-inch is being run in No. 1 Jamison at 4,855 feet. The U. S. Royalties has decided that it is impossible to finish its well, No. 23, at 4,545 feet, and is making preparations to deepen in the hope of picking up the Maxwell sand. The Superior is cleaning out No. 1 Maxwell at 4,525 feet and bailing for a test on No. 2, drilled to 4,978 feet. This is the sand which the U. S. Royalties hopes to pick up and, if the Superior is successful in securing production, the former may also finish a successful producer.

W. H. Fisher, a rather successful Long Beach operator, has been making good progress with his four Rosecrans wells and two of them, No. 9, at 4,295 feet, and No. 10, at 4,257 feet, are in the upper oil zone. It is not known whether Fisher will make a test or continue down to the more productive sand. No. 8 shows 4,895 feet of hole and No. 11, 1,945 feet. George F. Getty lost 4,256 feet of hole in No. 2 Athens as the result of a disastrous gas blowout and a new hole, No. 2-A, will replace it as soon as the rig has been finished. Getty's four remaining holes, varying in depth from 2,310 feet to 5,035 feet, are going ahead nicely. Paul Getty drilled his No. 1 Athens into production in a remarkably short time but he ran into a fishing job in his second hole and will be delayed pending the recovery of some drill pipe lost at 2,200 feet.

During the past seven days five new holes were started, one new rig erected, an additional location staked and one abandonment notice filed. The new holes spudded were started by Hale & McCloud, Painted Hills, Marine and two by the Henderson Petroleum Syndicate. Hitchcock & Ort finished the new rig, while the Julian Petroleum staked the additional location. The Huntington Central Oil Co., one of the first concerns to enter Huntington Beach, has secured a drilling site at Rosecrans and will undertake the new work in conjunction with Leland Mitchell. The location is quite favorable and if the field holds up for any length of time the well should be good for at least 500 bbls. a day. The Chanslor-Canfield Midway Oil Co. is making very satisfactory progress with No. 1 Bilhorn at 3,224 feet. The hope of this company lies in the possibility of picking up a new structure. Intervening dry holes prevent the present field from extending to this well but the company has hopes that the Rosecrans structure comes up again near its test. Several others are gambling on the same supposition. The Shell and Pan American are not yet convinced that there is not another producing area nearby, notwithstanding the fact that the former has passed the 5,525-foot level in No. 1 Leonis. The latter has just started its second test.

Inglewood

Two new wells were put on production at Inglewood during the past week, one standing to the credit of the Petroleum Securities and the other to the Standard. The former's No. 4 Cone was good for 646 bbls. of 19.2 gravity oil, which showed a cut of 2 per cent. The completion is listed at 1,775 feet, a string of 10-inch being used to finish the hole. Nos. 2 and 3, on the same lease, are in the oil sand, the former at 1,735 feet and the latter at 1,793 feet. No. 6, at 810 feet, has just been spudded in, while a rig is being erected for No. 7. Considerable new work is projected on the Rubel and Lloyd leases, and it is believed that the Petroleum Securities will start developing them within the near future. No. 1, on Vickers lease No. 2, is the Standard's latest completion in this field. It was carried down to 2,584 feet and finished with an 8¼-inch oil string carrying 285 feet of 60-mesh screen. The initial output, 241 bbls. of 18.4 gravity oil,

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

Swiftwind, March 20, Fall River, crude	78,904
H. M. Storey, March 30, New York, crude	96,419
Hagood, March 30, Boston, crude	76,411
Dixie Arrow, April 1, New York, refined	95,218
Swiftsure, April 1, Fall River, crude	76,977
William Rockefeller, April 4, New York, crude	136,452
Royal Arrow, April 4, Philadelphia, refined	98,462
Coastwise	
K. R. Kingsbury, March 30, Richmond, crude	82,791
Los Alamos, March 31, Seattle, refined	40,068
W. S. Miller, April 1, Richmond, crude	73,256
Capt. A. F. Lucas, April 1, Willbridge, refined	35,947
J. A. Moffett, April 2, Astoria, fuel	65,070
K. R. Kingsbury, April 2, Richmond, crude	85,226
Mojave, April 3, Seattle, fuel	75,718
Mericos H. Whittier, April 3, Avon, crude	75,379
W. S. Miller, April 4, Richmond, crude	74,553
F. H. Hillman, April 5, Point Wells, refined	112,346
Exports	
Tacoma (Br.), March 30, China, refined	73,111
Acasta (Br.), March 30, Balboa, fuel	45,351
Melpomene (Fr.), March 31, Balboa, refined	82,122
Manju Maru (Jap.), March 31, Japan, fuel	60,611
Santa Maria, March 31, Vancouver, fuel	75,432
Tahchee, (Br.), March 31, Manila, fuel	72,860
Mina Bres (Br.), March 31, Vancouver, crude	45,396
Cathwood, March 31, Chile, fuel	74,949
Mytilus (Br.), April 1, China, refined	63,137
Conus (Br.), April 5, Japan, fuel	55,138
Kiyo Maru (Jap.), April 5, Japan, fuel	70,695
From Ventura	
Frank H. Buck, April 2, Avon, crude	62,714
From Port San Luis	
Los Angeles, April 2, Oleum, crude	74,739
Oleum, April 2, San Diego, fuel	30,312
La Placentia, April 5, Oleum, crude	77,611
From San Francisco	
Agwipond, March 31, New York, tops	88,024
Charlie Watson, March 31, Point Wells, refined	14,379
Kewanee, March 31, Seattle, refined	22,998
Tejon, April 1, Portland, fuel	55,643
Sun, April 2, Jacksonville, refined	75,116
Frank G. Drum, April 5, Linnton, fuel	72,094

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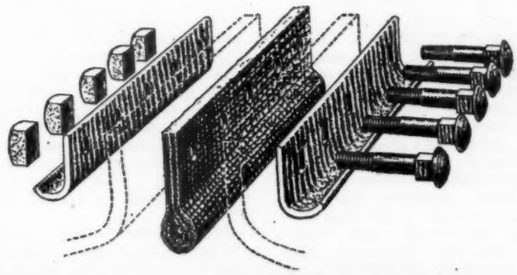

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showed a cut of 7 per cent. No. 2, on this lease, is going ahead at 1,806 feet, while No. 3 is making hole at 728 feet.

The Standard has not yet found any favorable indications in No. 1 on Los Angeles Investment lease No. 2, notwithstanding the fact that the hole has been carried to 5,316 feet. No. 2, at 2,044 feet, is sidetracking some 10-inch, while material is on ground for Nos. 3 and 4. On Los Angeles Investment lease No. 1, No. 4 is making a water test at 1,861 feet.

The 57 Petroleum Co., one of the pioneers in this section, is resuming work on its 4,537-foot hole with the intention of carrying it down for a thorough test. The company's lease is not very favorably located but recent developments indicate that deep production may possibly be secured. The 8¼-inch has collapsed at 3,338 feet and considerable work will be necessary before going ahead. Oscar Howard's No. 1 Dominguez is showing up unusually well at 2,513 feet and another good producer is anticipated. The Mohawk is going right ahead with its third hole in this field, No. 3 Machada, and should pass the 1,000-foot level within the next day or two. No. 1, on production intermittently, is good for 150 bbls. a day, while No. 2 is capable of approximately 260 bbls. No. 7 Sentous of the Pan American is drilling ahead in a gray sand at 2,620 feet and, notwithstanding the fact that it is but a short distance away from production, the pay has not yet been picked up. The outlook is not any too encouraging but it may be possible that the sand will be picked up around 2,700 feet. No. 2, which developed edgewater some time ago, is standing with a plug in bottom at 2,060 feet. The Petroleum Midway spudded in No. 5 Smith a few days ago and is scheduled to start another well on the Meynier lease within a short time. The Universal Consolidated is drilling ahead in No. 1 Youngsworth at 3,441 feet and the company has cause for some anxiety as the hole is getting quite deep and should have picked up the pay before this time. The Wilshire has No. 1 Nolan all rigged up and ready to spud in and it is believed that work will be started within the next few days.

Dominguez

The Shell returned No. 1 Manuel at Dominguez to production after recementing the 6¼-inch to exclude bottom water. The bottom of the hole is at 4,479 feet but it has been plugged back to 4,343 feet, at which depth the 6¼-inch was landed. It is flowing 656 bbls. per day but the output still shows a heavy cut running in the neighborhood of around 20 per cent. The company has not yet been able to complete No. 5 Manuel, drilled to 4,027 feet, because of water and the hole, which has just tested wet, will be recemented. On the Reyes lease, No. 26 has just been recemented for the fourth time and it will be a week or 10 days before another test can be made. No. 24 looks good and should be finished in the meantime. The Union is rigging up Nos. 10, 11 and 12 on the Callender lease and drilling should be started on these three holes very shortly. Work has been suspended on No. 2 Carson at 2,749 feet and on No. 3 Cason at 4,253 feet, both of which are in a bad mechanical condition. No. 1 Susana of the Henderson Petroleum is standing cemented at 4,153 feet after being plugged back from 4,320 feet.

The Chanslor-Canfield Midway Oil Co. was the only concern to place a well on production at Torrance. Its No. 36 Del Amo, completed at 3,679 feet and finished with a 6¼-inch oil string, was a 100-bbl. pumper, the oil testing 17.2 degrees and showing a cut of 3 per cent. No. 42 on this lease, now at 3,561 feet, looks like an early completion as it is showing up fairly well at this depth. The General Petroleum is finishing two wells on the Poggi lease, Nos. 6 and 7, which look good for about 100 bbls. each. The former is at 3,540 feet and the latter at 3,532 feet. The Shell is rigging up No. 2 Kettler, a deep hole carried to 5,373 feet but later plugged back and will put it on a pumping test within the near future.

Long Beach

The Hub Oil Co. has contracted with with the Pugh-Miller Drilling Co. and A. H. Delaney to drill four wells in the American Avenue section of the Long Beach Field on a 50-50 basis. The Hub furnishes the leases and equipment while the Pugh-Miller-Delaney interests do the work. The four new holes will be designated as No. 1 Rogers, No. 1 Hunt, No. 1 Wellman and No. 1 Woodward. The San Martinez Oil Co. has decided to deepen No. 2 Frye a few hundred feet and should make a test around the 4,000-foot level. The Union is coring No. 12 Long Beach Community practically solid since leaving the 1,800-foot level and this detail has resulted in slow drilling. Several months ago the company was made defendant in a suit resulting from the blowout of its No. 10 Long Beach Community a year or so ago. The plaintiff charged that the company's gasser wrecked the underground structure and seriously impaired the flow of several wells. The Union, by numerous core samples, will attempt to show that this gasser had no effect on the underground structure whatever. The Shell is making good footage in No. 6 Hutton, its solitary driller in this field, at 2,100 feet.

The General Petroleum's No. 2 Dabney at Huntington Beach, finished a short time ago, suddenly developed water trouble during the past week. It had been flowing in excess of 1,100 bbls. a day since completion and the appearance of water was quite surprising. The well had been killed and another cement job will be made. The company is making preparations to deepen No. 1 Dabney from 3,280 feet to around 3,700 feet in the hopes of increasing production. No. 4, a driller, is going ahead at 2,566 feet. The Standard's No. 30 on Lease B was given a test at 2,660 feet but looked wet as it started off pumping 60 bbls. of oil and 25 bbls. of water. The company's No. 18 Bolsa Chica, drilling ahead in a hard shale at 5,006 feet, looks like a dry hole and an early abandonment would not be surprising.

The only new development work undertaken at Santa Fe Springs recently was the redrilling of No. 2 Wardman of the Superior Oil Co., a former producer at 4,440 feet. The Shell is making preparations to abandon No. 5 Golay at 3,761 feet and No. 5 Thompson at 3,960 feet. Both holes are being plugged.

Rideout Heights

The Standard, after failing to secure production in No. 1 Patton at Rideout Heights, plugged back from 6,050 feet to 1,192 feet, filed an abandonment notice on the hole and is tearing out the equipment, preparatory to removing the rig. Not a wheel was turned on any of the drillers in this section of the Whittier Field during the past week, as work had been indefinitely suspended on practically all of them. In the older section of the Whittier Field, however, three holes are being worked on. The Central is drilling ahead in No. 74 at 1,400 feet, while the Standard is going ahead in No. 21 Home at 4,845 feet. The Ocean View is deepening No. 2 now at 3,860 feet but is being bothered with water. No. 2 Howard & Smith of the Standard of Montebello, a recently completion at 4,265 feet, has cleaned up to such an extent that it may result in additional drilling in the western part of the field. The output yesterday was 172 bbls. of 29.2 gravity oil, which is cutting approximately 1 per cent water. The McGinley Oil Co. is building a rig for No. 17 and will probably augment its present three drillers, No. 19 at 3,145 feet, No. 20 at 2,755 feet and No. 21 at 1,900 feet during the next few weeks.

All three of the Standard's drilling wells on the Murphy lease at Coyote are standing cemented, 8¼-inch oil strings being used in each instance. No. 100 is at 4,163 feet, No. 101 at 4,353 feet and No. 102 at 4,160 feet. No. 40 Emory is held up with a fishing job at 4,030 feet.

Newport

Barnet Rosenburg, a Torrance operator, has acquired two leases in the Newport area aggregating 100 acres and will, it is reported, start work on a new well within 30 days. Drilling will be done by the Empire Drilling Co. Another company, the Wilshire, has secured an option on some acreage but has not yet decided definitely whether to exercise it or not.

There was practically no change in any of the shallow wells in the area during the past week and very little crude was produced during this period due to the difficulty experienced in getting it out of the field as no pipe line connections are available. A loading rack is being constructed and should be ready for use in a week or two.

The Union's deep test in the Richfield district, No. 1 Tuffree, is drilling ahead in a brown sandy shale at 4,667 feet. Frequent cores are being taken, although this hole at one time looked fairly promising, it does not look any too encouraging at the present depth. The Chicksan Oil Co. is nearing the pay in No. 2 Bradford, now at 4,556 feet, and the hope of an early completion has resulted in the spudding of No. 3 Bradford. The Delaney-Craig Oil Co. is rigging up No. 1 Kraemer but has not yet started drilling. No. 6 Thompson of the General Petroleum is still being delayed with a fishing job which developed at 3,514 feet. The Standard's two holes on Kraemer lease No. 2, No. 18 at 3,900 feet and No. 10 at 3,200 feet, made satisfactory progress during the past seven days. The Tonner Oil Co. secured an okeh on the 12½-inch in No. 1 Swan at 1,537 feet and will begin making new hole in the morning.

Miscellaneous Wildcats

The Shell has given up the attempt to develop another field northwest of Long Beach and is accordingly abandoning No. 1 Virginia at Los Cerritos as a duster at 5,461 feet. This hole never even showed a rainbow and the decision of the company to withdraw from the area is not surprising. The Association is drilling a very interesting test in the Beverly Hills area and it would not be surprising if its No. 101 Fox, now at 3,340 feet, secures commercial production. The hole is being carried down as a deep test and, in view of the fact that the upper sands are productive, it has a better chance than the average wildcat. The Marland has passed the 4,500-foot level in its Davidson City wildcat and, in view of the fact that the Shell has just abandoned its No. 1 Virginia, it would not be surprising if the Marland followed a similar procedure with its test a short distance away. The Calwin Oil Co. is drilling ahead at 5,210 feet in its Eagle Rock wildcat and, although a few slight showings were reported at 5,200 feet, the hole does not look favorable for production. The Winwell Oil Co. is getting ready to make a production test of its Hawthorne wildcat, drilled to 5,586 feet, and although a few favorable indications have been reported, it is not believed that commercial production will be secured.

The Manhattan Pacific Oil Co. recemented its Hermosa Beach wildcat at 4,155 feet. This hole looks fairly promising as several upper showings have been noted from time to time. The Calny Oil Co. is drilling ahead in its Irvine wildcat in a hard sand at 2,886 feet. The Standard's No. 1 Irvine is going ahead in a dark shale at 2,100 feett. A core was taken in the latter's No. 1 Hadley near Rivera at 2,000 feet but no showings of any kind were found. No. 1 Stubbs of the Shell is going ahead quite rapidly and this La Mirada test, now at 3,140 feet, will either be on production or abandoned within six months. No. 1 Duncan of the Bixby-Midfield Oil Co. at Los Alamitos is standing cementing at 3,500 feet, the formation being a hard sandy shale. The Associated has passed the 4,400-foot level with its test in the Newhall-Saugus area, while the Union is drilling ahead at 2,065 feet in its willcat a mile or two away. Neither has yet shown any indication of resulting in production. The Union's No. 1 Newlin at Ocean Park did not pick up a shallow sand, as was thought possible, and at 3,572 feet the company's hope of developing production now lies in picking up a deeper zone. The Petroleum Securities is building the rig for No. 1 Crest at Palms but it is not believed that drilling will be started in less than three weeks. The Chino-Corono United Oil Co. has subleased 200 acres of its Puente Hills property, in consideration of the fact that the lessee will drill within 30 days.

Standard Wells Dry

The Standard shows 4,896 feet of hole on Section 28-11-22, in the San Emidio district and 2,225 feet on Section 5-10-22 in the same area. Neither test has shown any favorable indications to date. The Globe Petroleum is making preparations to abandon its Comanche Point wildcat at 2,520 feet in a granite formation. The Kern 29 Oil Co. spudded in its test on Section 29-31-30, and is just getting under way at 110 feet. The

(Continued on Page 96)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., April 11. — It is understood that the Dominion Government will adhere to its decision to discontinue the crude petroleum bounties on June 30 of the present year. On June 30, 1924, the pre-existing bounty of 52½ cents a barrel was reduced to 26¼ cents. Representations are still being made in favor of retention of the bounty, which is important to the oil industry in southwestern Ontario. Official figures recently presented in parliament show the following annual production and values for Canada, the bulk of this production coming from the Ontario fields, with a little crude from New Brunswick. Most, if not all, the crude production in Alberta does not fall within the bounty regulations and is not included in the official figures:

Year	Barrels	Value
1919	240,446	$856,038
1920	196,251	919,935
1921	187,641	641,533
1922	179,068	611,176
1923	171,902	542,555
1924	160,830	475,985

In Lambton County, including the Petrolia-Enniskillen, Oil Springs, Moore, Sarnia and Plympton Pools, there were in 1924 3,570 wells producing, with 216 pumping plants.

Ontario Fields

There is at present very little drilling in the Ontario fields. In Kent County, an important new deep test has been spudded in by the Union Natural Gas Co., No. 19, in the Dover deep field. The location is just west of No. 13, the best producer in the field. The test will be carried through the Trenton limestone to the granite. In the Tilbury Field, Union Natural Gas Co. has located No. 257 as a test of the Tilbury gas sand on the Askew farm, lot 173, Talbot Road, in Tilbury East Township.

In Zone Township, Kent County, shallow drilling operations north of Thamesville are reported temporarily shut down; but arrangements are being made to resume. It is possible that the deep test of E. P. Rowe and associates north of Thamesville, now shut down at 2,200 feet, will this year be carried through the Trenton.

In Middlesex County, north of Ailsa Craig, the Senator E. Michener Syndicate is reported to be continuing drilling operations. A test down about 1,500 feet is reported to have a showing of oil. The Michener Syndicate is also negotiating with the Six Nations and Mississauga Indians in Brant County for drilling rights on their reserves. The proposal was approved by the Six Nations Council at Ohsweken council house, and will be voted on by the Indians next week. The Indian department is to receive 10 per cent of any production secured for the benefit of the tribes as a whole, with a $50 cash payment to the individual owner of property for each well put down.

Western Canada

In western Canada considerable activity is reported in the Turner Valley-Okotoks Field, southwest of Calgary. It is reported that at least six new tests will be put down this season, following

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Rocky Mountain Area

By F. B. Taylor

Queen City Oil Co. gets 200-bbl. well in Sunburst Field. Activity at Artesia, N. M., increasing. Fort Collins and Wellington Dome alone busy in Colorado. Black oil getting attention as light oil output drops. Midwest to drill 250 wells in Salt Creek; 850 expected in Rocky Mountains in 1925.

CASPER, Wyo., April 11.—In the Sunburst Field, the Queen City Oil Co. found a producer on the Moore lease, Section 31-35-2, in the Ellis sand which came in at 1,472 feet. The production is estimated at 200 bbls. and the well is in the southwest corner of the field.

Crumley & McKnight on Section 4-34-2, have a freak well in their No. 1. This well was reported producing from a stray sand last year and has been drilled on down recently. It passed through two more sands, all productive, and is now estimated at 300 bbls. from a depth of 1,402 feet. This well originally started off at 1,000 bbls. from the first stray sand.

The Johnson well on the Corey lease of the old Sunburst holding on Section 4-34-2, is a 50-bbl. producer and is making considerable gas with the oil. This well was somewhat of a disappointment as it was expected to come in a big producer like the other big wells on this section that started off as high as 4,000 bbls. last year.

Artesia Field

The Artesia Field in New Mexico has another good producer in the well of the New State Oil Co. on Section 4-18-28. The field is extending slowly as the present drilling operations seem to be trying out the development where production has already been found rather than making big jumps out on the side.

Artesia now has 16 wells completed and the State has 35 strings of tools running, including the Artesia Field. The wildcat operations promise well as these are mainly located on defined structures. Considerable interest has awakened over the dry hole of the California Co. on Section 15-23-24, in Colfax County, on account of the flow of gas found by this well at about 1,500 feet. The hole went to 2,500 feet and was abandoned and plugged, but the gas struck at 1,500 feet is from all accounts believed to have been helium as it was non-inflammable. It may also have been carbonic gas as there was a well in Utah that found carbonic gas, which is non-inflammable.

Colorado Operations

In Colorado the Fort Collins and Wellington Fields are active, but the rest of the State is rather quiet. The Iles Dome is being condemned by the operators since the Midwest brought in the last water well and this gives a black eye to the Moffat Field also. In the Fort Collins Field the Whittaker well is producing through considerable mud at the bottom of the hole and the Union of California is making an effort to clean out the well. A special bailer had to be made for the work and this bailer is now being used with some success. The Verstratten well of the Union of California is making an average of 1,000 bbls. daily, another loading rack being constructed near Fort Collins and the shipments of crude are mounting. About 70 cars were sent out one day last week.

The Brendel & Ache well that was expected to prove that the Fort Collins Field extends to the east on its south end, had lost the hole and a new one will have to be drilled. This is a keen disappointment to the operators as this firm has made good time with this well up to the accident and many believe the well will prove up a new portion of productive area. The rig is being skidded for a new start.

The Union of Colorado is now drilling below 4,825 feet and hopes to complete within the next 100 feet.

Rumors of Mergers

Some interesting mergers are expected in Wyoming oildom in the near future. Due to the scarcity of new fields the past year, the oil companies that have refining plants in this region are anxiously looking around for other supplies of crude than what they have and the smaller firms are being approached with offers of consolidation.

One of the interesting phases of this turn of events is the interest shown in the black oil fields which heretofore have lain idle for the most part and the oil production considered a drug on the market. The Kasoming Oil Co. and the Producers & Refiners Corp. have recently been active in the black oil operations and the engineers of these two firms, both of which are subsidiaries of the Prairie, have been out in the Bolton Creek, Iron Creek, Poison Spider, Maverick Springs and the Lander Fields, where black oil is produced or could be produced if market facilities were available. The Producers & Refiners has placed some tank cars on the railroad between Lander and Casper to carry the black oil produced in the Lander fields to Casper, where it will be unloaded at the P. & R. pumping station just west of Casper, and then shipped by pipe line to Parco, where the P. & R. has its big refinery. This means that the P. & R. refinery will have to put in an asphalt plant at Parco to handle this grade of crude.

While the light grades of crude oil were being produced in this region up to the present, the refiners had a sufficient supply of this oil to operate their plants at capacity; now, as the light oil production drops below the capacity of the refining plants, a scramble for oil has resulted and the black oil operations are coming into prominence. There is about 3,000 bbls. daily production of black oil to be had in central Wyoming and the Producers & Refiners evidently consider it worth looking into.

The Producers & Refiners control the Hudson Field, at Lander, also at that point are the Dallas and Derby Fields, which are owned by English people. Then the Maverick Springs Field, north of Riverton, is owned by the Union of California, the Ohio and the Carter companies. This field has no pipe line. At Iron Creek and Poison Spider, the Fargo Oil Co., controls most of the oil production and has a pipe line to Casper that passes within a few yards of the P. & R. pump station. The Bolton Creek Field, about 30 miles southwest of Casper, has shut in production although the deep wells there were drilled too deep and went into the water in the bottom of the sand. This field has some oil in storage and a pipe line to Casper although no oil has ever been shipped through this pipe line so far. It is considered that the Bolton Field could be brought to production by the drilling of new wells and the rejuvenation of the old ones. The same condition exists in the Poison Spider but here the Fargo Oil Co. has been careful not to drill into the sand deep enough to open up the water in the bottom.

Another merger of companies is expected to be announced in the near future by the Marine and Glenrock interests. This combination controls production in Salt Creek, Pilot Butte and Big Muddy.

The general trend of all the companies in this region is toward strict economy. Along this line, a move on the part of the Midwest is reported by which the Midwest will consolidate the Casper and Denver offices at Casper and thus eliminate the double expense incurred in keeping two main offices. The work of the Denver office would then be handled at the Chicago office of the Standard of Indiana and at the main offices at Casper.

Wertz Dome Producer

The Texas Co.'s well on the Wertz Dome in the Lost Soldier Field, in Carbon County, that was reported a producer a short time ago, located on Section 12-26-90, is expected to change opinions regarding gas fields in this region. The Wertz Dome has always been considered a gas area only up to the present and is similar to several other like areas in central Wyoming. The Producers & Refiners drilled three big gassers there that have been producing a very wet gas for several years and The Texas Co.'s well came in with only a small gas production in the top of the sand. When the tools were pulled out, over 500 feet of oil was found in the hole and drilling was ordered resumed. The tools had hardly reached a depth of 7 or 8 feet in the sand when the well started to flow oil and this is the first time an oil producer has been found on a gas structure in Wyoming.

This strike confirms the supposition long held by many geologists and petroleum engineers that the larger gas structures would prove oil producing also, on the flanks of the dome and Sand Draw, Billy Creek, Byron and other gas areas are expected to discover oil.

To Drill 850 Wells

The Midwest Refining Co. expects to drill 250 wells in the Salt Creek Field the coming year. Added to this will be about 50 wells in the wildcat districts and other fields, making a total of 300 wells for this one company for the year. The Ohio Oil Co., Carter Oil Co. and other firms are expected to bring this total to 850 wells all over the Rocky Mountain region for 1925.

In the Salt Creek Field, the Kinney Coastal Oil Co. has abandoned the deep test on Section 19-39-78 as a duster. The total depth was 3,908 feet. This well is thought to have passed through both the Dakota and Lakota sands and found same without production although some hold the well never reached the Lakota.

The Midwest is still trying to cement on its deep test on Section 23-40-79 and the Prairie, (Kasoming) is starting to drill its deep test on Section 15-40-79 to the Lakota. This last well is now at 1,845 feet.

The Continental Oil Co.'s test on Section 2-39-79 is having trouble with a lost core barrel being used to core this well in order to furnish a consecutive log of that part of the field from top to bottom. When the core barrel twisted off, the top was reamed out by the upper part of the tools and this makes it hard for any fishing tool to go over the broken piece.

Three wells were completed in Salt Creek the past week by the Midwest. The Midwest Oil Co. on Section 19-40-78 found production in the second Wall Creek sand at 2,048 feet and will make a 25-bbl. pumper. The Wyoming Associated on Section 24-40-79, found production at 1,981 feet and will make a small pumper and the Salt Creek Con-

(Continued on Page 119)

News of Mexican Fields

By George Blardone

TAMPICO, Mex., April 10.—Breaking in unawares at an exceptionally shallow depth, the territory considered, National Lines' No. 12 Chapacao, a railway well located in the company's right-of-way, Ebano sector of the northern fields, is good for 15,000 bbls. at 1,545 feet. This is the shallowest producer of worth in all this sector. The well came in, smashing the gate valve, and it shortly afterwards partly bridged. At this writing a new valve is being placed and it will probably be under full control in a matter of hours. The completion of this well gives the National Lines two wells worth while, No. 6 having been completed March 3, at 2,125 feet, rated good for 10,000 bbls. The difference in depths of the two is immediately noticeable. No. 12 should be a producer of longevity and much worth, its depth considered.

Apart from the No. 12 considered above, there were some 11 wells completed during the past week, aside from International Petroleum Co.'s No. 165, Lot 5 Cacalilao, already reported, a 10,000-bbl. well. Of the 11 in question, only two small producers are in the list, International Petroleum Co.'s No. 168, Lot 5, Cacalilao, rated 500 bbls. at 2,140 feet; and No. 171, Lot 3, same sector, rated 400 bbls. at 1,750 feet. The rest were failures; all completions being in the northern fields.

The failures follow: East Coast Oil Co.'s No. 436 Ingenio, in the old Panuco Field, is a 50-bbl. showing at 1,980 feet; International Petroleum Co.'s Nos. 151 and 154, Lot 5 Cacalilao, both drilled into salt water at 2,315 and 2,375 feet, respectively. Mexican Sinclair Petroleum Corp.'s No. 94, Lot 3 Cacalilao, is a duster at 2,254 feet. Mexican Atlas Petroleum Corp.'s No. 6 Palangana, is a duster at 2,300 feet. Transcontinental Petroleum Co.'s No. 179, Lot 4 Cacalilao, drilled into salt water at 1,985 feet. Cosmos Oil Co.'s No. 9, Lot G, Corcovado, is a failure at 2,370 feet. Two more Corcovado failures are Mexican Gulf Oil Co.'s Nos. 8 and 20, Lot 4, dry holes at 2,360 and 2,400 feet, respectively. Mexican Petroleum Co.'s No. 18 Chapacao, Ebano sector, is a duster at 2,265 feet.

Apropos of Mexican Petroleum Co.'s tests near the Corcovado line, consider its No. 3 San Pedro, reported at 5,000 bbls. last week at 2,185 feet. This was a pocket that did not last. It was drilled to 2,222 feet, and at that depth is rated good for 2,000 bbls.

Cacalilao

Drilling operations in the Cacalilao sector of the northern fields at the week end were as follows: In Lot 1, by La Corona Petroleum Co., Nos. 152 and 171 at 520 and 600 feet in gray shale respectively. No. 172 is rigging. Nos. 169 and 170, in Lot 4, are in the San Felipe at 1,169 and 1,140 feet, respectively. International Petroleum Co.'s operations in Lot 5; No. 155 is in white lime at 2,145 feet; No. 157 is fishing tools at 2,085 feet in the same formation; Nos. 160 and 161 are in gray lime at 1,805 and 1,895 feet, respectively; No. 163 is in the same formation with a

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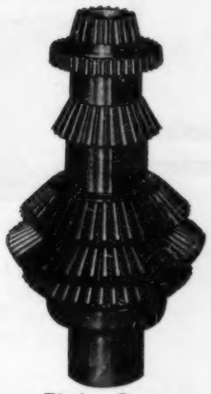

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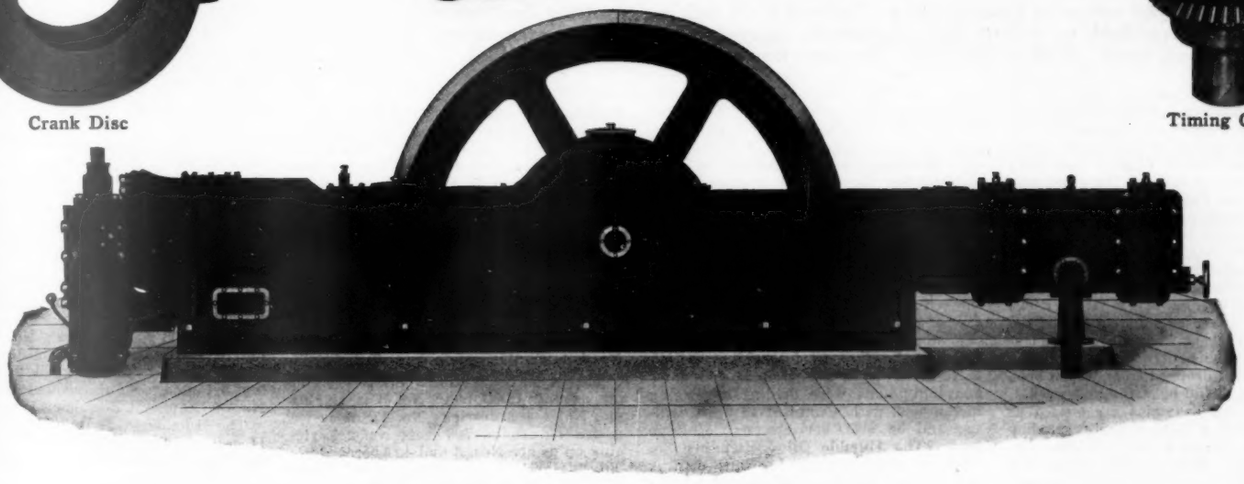

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PLANTS IN
Springfield
Lima
Bucyrus

Gulf Coast Oil Operations

By P. L. McGreal

South Liberty and Hull Pools show decline in production with resultant drop in total output of Coastal Pools. Caldwell Field aids in permitting Southwest Texas fields to register gain. Less wells completed in Gulf Coast area during past week. Well of The Texas Co. stops flowing at Blue Ridge.

HOUSTON, Tex., April 13.—A decrease in the number of completions during the week and a decline in the gross output of the South Liberty and Hull Pools combined to ease off the gross production in the Coastal area 4,250 bbls. during the week ending April 11. The total is placed at 101,840 bbls., compared with 106,090 bbls. during the previous week. The gross for South Texas is 94,110 bbls. and for South Louisiana, 7,730 bbls. A well flowing in the Blue Ridge Pool suddenly ceased and cut down the daily average there from 2,275 bbls. last week to 1,200 bbls. this week. The South Liberty district dropped from 16,230 bbls. last week to 13,450 bbls. for this week.

The following examples are offered as illustrating the rapidly changing production figures in the Coastal region. In South Liberty, Mills Bennett's No. 7-B Pickett, which came in early in the week credited with 2,000 bbls. per day at 3,500 feet, declined to 850 bbls. before the end of the seven-day period. No. 6 Pickett, which came in April 3 credited with 1,800 bbls. initial, dropped to 1,300 bbls. In the Hull Pool, The Texas Co.'s No. 2 Hannah, originally a 3,500-bbl. well, is now making 1,600 bbls. The Houston Production Co.'s No. 8 Taylor there, coming in initially with 3,800 bbls. flow, then declining to 2,500 bbls. is now doing 600 bbls. on air, showing 40 per cent sediment and water.

The estimated daily average for the Southwest fields is placed at 45,110 bbls., against 42,900 bbls. last week. The increase is due to the new field 6 miles northeast of Lockhart, in Caldwell County, which is now credited with 2,750 bbls., following the completion of the Sun Oil Co.'s No. 2 Gomillion, rated at 2,000 bbls.

Operations in the Pools

A total of 25 wells were completed in the Coastal region during the week, five of which were dry and one salt water. The initial output was 1,225 bbls. At the close of the week, six wells are bailing.

In addition to the completions already mentioned in the South Liberty Pool, the Vacuum Oil Co.'s No. 5 Barrett came in at 3,500 feet, flowing 800 bbls. Mills Bennett's No. 5-B Pickett is an 800-bbl. well at 3,500 feet. The Humble Oil & Refining Co. abandoned No. 2-B Rivere after it staged a gas blowout at 3,450 feet and also quit No. 1-A Pickett at 3,760 feet. The Texas Co. abandoned No. 1 Staiti in salt at 1,960 feet. The Bashara Oil Co.'s No. 1 Pickett is bailing, after being worked over at 3,500 feet. The Sun Oil Co.'s No. 1 Shade is showing oil at 3,450 feet.

The Gulf Production Co. has cut the contract price for drilling in the pool from $4 to $3.50 per foot and it is probable other operators will do likewise as soon as the present contracts are completed.

Operators are fortunate in that the long dry spell, most unusual at this season in the Gulf region, enables operations to be continued at reduced cost. The location of the pool, 3 miles south of the town of Liberty, is in a swamp that is under water during the rainy season and from the overflow from the Trinity River. The increasing number of rigs in operation each week shows the anxiety of operators to take advantage of the dry weather and favorable conditions there. The town of Liberty is filled with field workers and the usual element that gathers in every new development. The town is on the main line of the Southern Pacific Railroad, east of Houston, and the railroad has three switch engines in the yards there handling carloads of pipe, rigs and other equipment, which is hauled down to the pool in trucks.

The Humble Pipe Line Co. is running an average of 7,000 bbls. per day from the pool and is excavating a 250,000-bbl. earthen storage tank at Dayton for the excess crude. These earthen reservoirs cost about 3½ cents per barrel to excavate and make safe for holding the oil.

At the close of the week 16 companies and individuals were drilling or rigging in the pool, with a total of 49 wells drilling and 38 rigs, derricks or locations made. The Humble Oil & Refining Co. leads in activity with 14 wells drilling and 9 rigs, derricks and locations. The Gulf Production Co. is next in line with 9 wells drilling and 10 rigging, derricks standing or locations made. The Sun Oil Co. is making a heavy play in the pool, drilling six wells at present with two rigs in. The Oxford-Navarro Oil Co. jointly have five wells drilling with one ready to start. The Texas, Vacuum Oil and Mills Bennett are each drilling two, with the first named having five derricks up or locations made for more; Bennett and the Vacuum Oil Co. each have two rigging. The Hoffer Oil Co. is drilling two holes with one rigging. The Peer Oil, Bashara Oil, Associated Oil, Sinclair Oil & Gas and Mrs. Neils Esperson are each drilling one well, with the Peer company rigging for three more. The Supreme Oil Co. and F. M. Long are each rigging one.

Mrs. Esperson, who is drilling No. 1 Baldwin, is the widow of the late Neils Esperson, founder of the Invincible Oil Co. and one of the most active operators in Texas and North Louisiana before his death. He left an estate of several million dollars, which is being ably managed by Mrs. Esperson, who is as familiar with the producing end of the industry as any man, having constantly visited the fields with her husband and acquainted herself with the details of the business.

Drilling at South Liberty

The following is a detailed drilling status of the wells at the close of the week:

The Humble Oil & Refining Co.'s No. 2 Pickett is drilling around 1,650 feet; No. 1 Pickett "B", 3,100 feet; No. 2 is fishing at 1,400 feet; No. 3 is drilling around 1,700 feet; No. 1 Pickett "C", 2,300 feet; No. 2 at 1,500 feet; No. 3 at 1,600 feet; Nos. 4 and 5 are locations; No. 2 Harrison-Pickett "A" is drilling around 2,100 feet; No. 1 Hansen "A" around 2,100 feet; No. 4 Chambers "A" is rigging up; No. 2 is drilling around 2,850 feet; No. 3 is a location; No. 1 Chambers "B" is drilling around 2,500 feet; No. 2 around 1,400 feet; No. 3 is a location; No. 1 Mitchell is rigging up; No. 1 Schade is drilling around 2,000 feet; No. 2 around 550 feet; No. 3 is rigging up and Nos. 4 and 5 are locations.

The Vacuum Oil Co.'s No. 6 Barrett is drilling around 1,800 feet; No. 7 around 2,000 feet; No. 8 is a derrick; No. 9 is a location; No. 10 a derrick, No. 11 is rigging.

The Gulf Production Co.'s No. 2 John Hamman is drilling around 3,100 feet; No. 1 A. Williams and others around 3,350 feet; No. 2 around 1,950 feet; No. 3 is a derrick; No. 4 is drilling around 1,900 feet; No. 1 W. C. Orgain and others around 3,650 feet; No. 2 is rigging up; No. 3 is a location; No. 1 O. A. Schade fee is drilling around 2,400 feet; No. 2 around 2,550 feet; No. 3 around 1,700 feet; No. 4 around 950 feet; Nos. 5 and 6 are rigging up; No. 7 is building derrick; No. 2 Van de Venter and others is a location; No. 1 Antoine is rigging up; No. 1 Deussen fee "A" is rigging up; No. 1 J. F. Richardson is a derrick.

The Texas Co.'s No. 2 Staiti is drilling around 1,050 feet; No. 3 is rigging up; No. 4 is a derrick; No. 1 Simms fee is drilling around 700 feet; No. 2 is rigging up as are Nos. 3 and 4. Abercombie's No. 1 Harrison is drilling around 2,550 feet; No. 2 around 2,100 feet; the Associated Oil Co.'s No. 1 Condict fee is rigging up; the Sinclair Oil & Gas Co.'s No. 1 Condict fee is rigging up; F. M. Long's No. 2 Andrews is rigging up; the Supreme Oil Co.'s No. 1 Mitchell is rigring up.

Mills Bennett's No. 4 Pickett has been abandoned as a location. No. 8 Pickett is drilling at 3,415 feet, and No. 9 is rigging with a derrick up for No. 10. His No. 2 Rivere-Brown is drilling around 2,865 feet. The Bashara Oil Co.'s No. 2 Pickett is at 3,655 feet. No. 2 is at 2,455 feet and No. 3 is waiting on a rig. The Peer Oil Co.'s No. 4 Harrison is at 3,000 feet. No.'s 3 and 5 are rigging with a derrick standing for No. 6. Mrs. Esperson's No. 1 Baldwin is fishing at 3,600 feet.

The Sun Oil Co.'s No. 1 Schade is showing oil at 3,450 feet; No. 2 is drilling around 3,100 feet; No. 3 around 2,600 feet; No. 4 around 1,050 feet; No. 5 around 350 feet; No. 6 is rigging up; No. 7 is drilling around 1,150 feet; No. 8 is a location. The Oxford and Navarro Oil Co.'s No. 4 Harrison is drilling around 3,200 feet; No. 5 around 2,850 feet; No. 6 around 1,850 feet; No. 7 around 900 feet; No. 8 is fishing at 1,100 feet; No. 9 is rigging and No. 10 is a location.

Hull Pool

On the north side of the Hull Pool, the Yount-Lee Oil Co.'s No. 6 Stengler is pumping 200 bbls. at 2,750 feet. On the east side, the Republic Production Co.-Houston Oil Co.'s joint Nos. 108 and 110 Dolbear are both pumpers at 1,275 and 1,835 feet respectively. The Higgins Oil & Fuel Co.'s No. 3 Republic is a 35-bbl. well at 2,150 feet. The Empire Gas & Fuel Co.'s No. 16 Barngrover, a workover, is pumping 50 bbls.

The district has dropped to second place as far as drilling operations are concerned, with Orange in third place. Twenty rigs are drilling holes in the Hull Pool, with four more strings starting. The Orange Pool has 11 rigs in operation and two starting at the close of the week.

Operations at Hull are as follows:

The Gulf Production Co.'s No. 48 Phoenix is drilling around 3,050 feet; No. 49 around 2,050 feet; No. 50 around 910 feet; No. 51 around 200 feet; No. 20 Morris-Phillips is fishing at 3,520 feet; No. 17 David Hannah fee is drilling around 2,375 feet; No. 13 J. C. Baldwin fee is rigging up; No. 11 is drilling around 3,050 feet; No. 15 Scarborough around 3,550 feet.

The Humble Oil & Refining Co.'s No. 16 Guedry is drilling around 3,050 feet; No. 2 Merchant is around 3,730 feet; No. 2 Hannah, around 2,320 feet; the Mecom Oil Co.'s No. 8 Taylor, around 1,825 feet; the Eagle Point Oil Co.'s No. 3 Wheelock, around 1,400 feet; the Republic-Houston Oil Co.'s No. 109 Dolbear, around 2,525 feet; No. 111 is around 2,360 feet; No. 112, around 1,200 feet; No. 113, around 400 feet; the Higgins Oil & Fuel Co.'s No. 6 Taylor, around 2,925 feet; The Texas Co.'s No. 3 Hannah is around 990 feet; The Texas-Vacuum Oil Co.'s No. 4 Hannah, around 3,175 feet; No. 5 is a derrick; the Yount-Lee Oil Co.'s No. 5 Stengler, drilling around 2,900 feet; No. 7 is a derrick; No. 11 Merchant is drilling around 2,800 feet, and No. 12 around 1,775 feet.

Goose Creek Pool

In the Goose Creek Pool, operations are gradually dropping off, with many of the rigs being shipped to the South Liberty district. The Gulf Coast-United Corp.'s joint No. 31 Galliard is pumping 40 bbls. at 2,590 feet and the Gulf Production Co.'s No. 10-C Galliard will make another pumper after being worked over at 2,930 feet.

The Gulf Production Co.'s No. 17 J. Galliard fee is drilling around 2,470 feet; No. 32 Stateland Oil Co., around 2,750 feet; No. 33 is a derrick; No. 9 Chapman-Bryan is drilling around 2,465 feet; No. 9 Wright "A," around 2,250 feet; No. 5 Paddock-Smith, around 1,830 feet; No. 24 Beaumont Petroleum is rigging up.

The Humble Oil & Refining Co.'s No. 1 Hog Island is drilling around 3,400 feet; No. 60 Simms-Smith has cemented casing at 4,125 feet; No. 61 is drilling around 4,150 feet; No. 62, around 1,380 feet. The Gulf Coast Oil Corp.'s No. 6 Galliard is rigging up to work over. The Sun Oil Co.'s No. 3 Wright is drilling around 2,210 feet. The Norman Bruce Petroleum Co.'s No. 1 Scorrega is washing. The Southern Exploration Co.'s No. 11 Wright is drilling around 1,511 feet.

Orange Pool

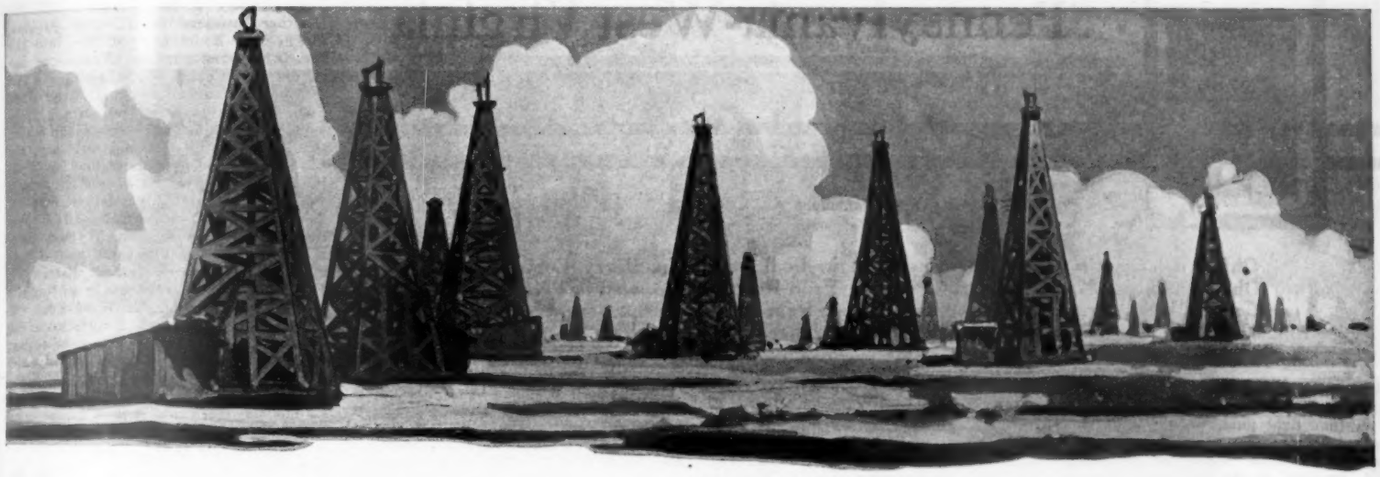
In the Orange Pool, the Rycade Petroleum Corp.'s No. 2-A Cow Bayou, has increased from 3,600 to 4,000 bbls. per day. It is 15 days old and is producing from 4,600 feet. The well is making a record for the Orange Pool, where the deep sand wells have been going to water very quickly after being completed and flowing flush for a few days. The Supreme Oil Co.'s No. 1 Jackson, deepened to 4,800 feet, bailed dry. The Brownie Babbittee Oil Co.'s No. 4 McLean got salt water at the same depth. The Gulf Production Co.'s No. 17 Hager fee on the west side of Cow Bayou is bailing at 3,495 feet. The Atlantic Oil Producing Co.'s No. 5 Carbello is pumping 120 bbls. at 3,350 feet, 70 per cent oil. The Sinclair Oil & Gas Co.'s No. 4 Granger is a pumper at 3,300 feet. The Mutual Oil Co.'s No. 7 Chesson is maing 10 bbls. on the jack at 4,650 feet, after being deepened. The Gulf Coast Oil Co. is bailing No. 1 Leon at 3,375 feet, after working it over.

The Rycade Oil Corp.'s No. 5 State "A" is drilling around 3,950 feet; the Tillery Oil Co.'s No. 1 State is fishing at 3,900 feet; the Humble Oil & Refining Co.'s No. 9 Chesson "B" is drilling around 4,520 feet; No. 10 around 4,750 feet; No. 21, around 3,300 feet; No. 11 Winifree, around 4,700 feet. The Orange Petroleum Co.'s No. 9 Chesson is rigging up. The Sun Oil Co.'s No. 3 Brown in the southeast part of the pool, is sidetracking at 4,020 feet. Its No. 6 Gunstream is deepening at 4,625 feet. The Edgerly Petroleum Co.'s No. 2 Carbello is at 3,345 feet. The Mutual Oil Co.'s No. 4 Chesson is drilling deeper at 4,765 feet, with a derrick standing for No. 14 Chesson.

Brazoria County Pools

Two dry holes were the result of the week's work in the West Columbia Pool. The Humble Oil & Refining Co. abandoned No. 10 T. W. at 1,370 feet and the Hyde Production Co. quit No. 2 McGregor at 775 feet. A location has been made for No. 3 Underwood. The Humble

(Continued on Page 98)



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INTERNATIONAL STEEL IDECO DERRICKS (GALVANIZED)

Pennsylvania-West Virginia

By D. S. Wakenight

Ohio Fuel Corp.'s deep sand completion in Coal Township, Perry County, Ohio, produces 187 bbls. in first 24 hours. Penn Royal Oil Co. well in Ritchie County, West Virginia, flows 40 bbls. South Penn Oil Co.'s producer, Wayne Township, Creek County, Pennsylvania, averages 27 bbls. a day.

PITTSBURGH, Pa., April 13.—It is a pleasure to be able to report something better than light pumpers, gas wells and dry holes from the West Virginia and southeastern Ohio fields. In the deep sand territory, in the northwest quarter of Section 36, Coal Township, Perry County, a section that has been furnishing more good producers than any other in the deep territory, the Ohio Fuel Corp., formerly the Ohio Fuel Supply Co., has completed and shot in the Clinton sand No. 5 on the Charles Trimmer farm. The well produced 187 bbls. the ensuing 24 hours. The location is 700 feet northeast of the Sunday Creek Coal Co.'s No. 123. In the same locality, the Sunday Creek Coal Co. is drilling in the sand at this well. No. 124 is drilling at 1,500 feet. The Carter Oil Co. is also drilling at 1,500 feet at a second test on the Acker heirs' farm.

In Section 33, Pleasant Township, in the old Corning district, C. L. Bullock & Co. completed No. 17 on the John Grennan farm. It is a 3-bbl. pumper in the Berea grit. In Section 27, Bearfield Township, John Foutz completed in the same formation No. 8 on the Thompson lease on the Michael Lemity farm and has the same kind of a producer. In Section 26, Ward Township, Hocking County, the Arkansas Fuel Oil Co.'s second test on the Nelson H. France farm is not good for more than 3 or 4 bbls. a day. In Newton Township, Licking County, F. M. Rugg & Co. have a 4-bbl. pumper in the Berea grit at No. 4 on the Jacob Weiss farm. In Hopewell Township, the Pure Oil Co. is rigging up at a second test on the L. A. McCracken farm. In Hanover Township, the E. H. Everett Co. is hauling rig timbers to a location on the Phillips farm. In Harrison Township, Knox County, O. A. J. Weidman has started to drill a second test on the John M. Purdy farm.

In Louden Township, Carroll County, the Miller Lees Oil & Gas Co.'s No. 11 on the Tony & Karal Miskel farm is a 15-bbl. pumper in the Berea grit. In Liberty Township, Washington County, Section 19, William Huntsman & Co. have a 4-bbl. pumper in the first Cow Run sand at No. 3 on the Ora Erbes farm. In Section 16, Lawrence Township, I. D. Jones is drilling on the Carrie Bartelle farm. The Ohio Fuel Corp. has completed in the Clinton sand in Lot 4, Madison Township, Licking County, a test on the Orville Kiger farm. It is a light gasser, 1 mile east of Newark.

The Mideast Oil Co.'s test on the E. Bowlin farm, in Section 10, Hopewell Township, Muskingum County, is a gasser in the Clinton sand good for 500,000 feet. It is one-half mile northeast of the same company's test on the M. J. Wildman farm. In Section 9, Monroe Township, Holmes County, the East Ohio Gas Co. is drilling and due in the sand at a test on the F. C. Close farm. In Prairie Township, the Central Ohio Gas Co. is due in the Clinton sand at a test on the Byron Kendall farm. In the northeast quarter of Section 35, Reading Township, Perry County, the Carter Oil Co. has drilled its test on the William Green farm through the Clinton sand without getting a show of oil or gas. This location is one-half mile east of the company's test on the E. A. Reichley farm. One location east of the Logan Gas Co.'s test on the Scott V. Mast farm, in Section 8, Hardy Township, Holmes County, the East Ohio Gas Co.'s test on the Clark Smith farm is dry in all sands. In Lot 13, Franklin Township, Licking County, the Detex Oil Co. and others have completed in the Berea grit a test on the Otto Franks farm not good for more than 2 bbls. a day.

Light Pumper in Morgan County

In York Township, Morgan County, a section that has been furnishing good producers, the Pure Oil Co. has completed and shot in the Berea grit a test on the Clarence Fye farm. It is a 10-bbl. pumper, 500 feet east of No. 4 on the George J. Fye farm. In Section 19, Liberty Township, Washington County, Beeson Bailey & Co. completed No. 7 on the James R. Heslop farm, showing for a 15-bbl. pumper in shale at a total depth of 650 feet. A producer in this formation is a new departure for this section. Heretofore the production has been found in the lower sands.

In Section 2, Richland Township, Fairfield County, the Pure Oil Co. has started to drill on the Frank Miller farm. In the same section, this company has started to drill another test on the Owen Smith farm. In Madison Township, Perry County, the Mid-East Oil Co. has started to drill a test on the G. L. Hazlett farm. In the same township, the Carter Oil Co. has the rig completed for a test on the J. McCullough farm.

In Section 5, Richland Township, Holmes County, 1½ miles east of the village of Clenmont, the East Ohio Gas Co. has completed in the Clinton sand a wildcat on the John N. Patterson farm. It is a duster. In Section 25, Perry Township, Licking County, the Carter Oil Co. completed and shot in the Clinton sand No. 3 on the John Somerville farm. They swabbed 15 bbls. the first 24 hours. The location is 700 feet north of the second test on this farm. In Section 23, Washington Township, Monroe County, the Carter Oil Co. has drilled i na Berea grit duster at its second test on the Catherine Malone farm.

Drilling Tests in Licking County

In Lot 21, Franklin Township, Licking County, W. W. & A. T. Wehrle are drilling a test on the William Smith farm. In Lot 7, the same parties are drilling a test on the B. Ewers farm. In Lot 11, Madison Township, this company has started to drill a test on the J. V. Jeffers farm. All three are Berea grit tests. In Lot 13, Franklin Township, the Detex Oil & Gas Co. is drilling on the Otto Franks farm. In Hanover, Township, the Carter Oil Co. is drilling another test on the James Settles farm.

West Virginia Gassers and Pumpers

As a producer of gas, Logan district, Logan County, West Virginia, is coming to the front. On Hewitts Creek, the Wacatock Oil & Gas Co. has completed in the Berea grit its test on the Guyan Mercantile Co.'s property, a gasser good for 3,500,000 feet a day. On the same stream and district, the South Penn Oil Co. has started to drill Nos. 7 and 12 on the Yawkey-Freeman tract. On Pigeon Creek, Lee district, Mingo County, the Pure Oil Co. has started to drill a wildcat on the United Thacker Coal Co.'s property.

On the waters of Big Coal River, Peytonia district, Boone County, the Owens Bottle & Machine Co. completed a test on the Fuel Land Co.'s tract, good for 250,000 feet in the Big Lime formation. In the same district, this company has started to drill a second test on the Bull Creek Coal & Land Co.'s property. On Laurel Creek, Union district, Wood County, the New York Petroleum Co. completed a test on the Benjamin Patterson, a very light pumper in the second Cow Run sand. On the same stream and same district, the Peevey Oil Co. has a duster in the Berea grit at a test on the Sugdin farm. On Worthington Creek, near Boreman Station, Park Bowser is drilling a test on the L. Dye farm. In Lubeck district, Staats Brothers' test on the B. Smith farm is dry in the Cow Run sand. In Walker district, John Leeton & Co.'s test on the John Copling farm is a 5-bbl. pumper in the salt sand.

On Poca fork of Little Sandy Creek, Elk district, Kanawha County, the United Fuel Gas Co. has completed in the Big Injun sand a second test on the W. J. Patterson farm. It is a gasser good for 1,000,000 feet. In the same district, and on the same stream, the same company has started to drill a test on the C. R. Dew farm. In Big Sandy district, this company has started to drill a test on the W. W. Kennedy farm.

On Lost Creek, Grant district, Harrison County, the Lone Star Oil Co. drilled its test on the A. C. Cochran farm through the Speechley sand to a depth of 2,990 feet. It is a gasser. In Clay district, Monongalia County, the J. H. McDermott Oil Co. has a light gasser in the Bayard sand at old No. 1 on the W. H. Eddy farm, drilled down. The total depth is 3,020 feet. In the same district, the South Penn Oil Co.'s old No. 1 on the Teter B. Tennant farm has been drilled down to the Bayard sand and is a light gasser. In Grant district, Doddridge County, the Hope Natural Gas Co.'s test on the R. D. McIntyre farm is a gasser in the Big Injun sand. On Rush Creek, Smithfield district, Roane County, W. P. Heater has drilled his test on the J. L. Meadow farm through the Berea grit and dry. In Williams district, Wood County, in the Big Run Pool, Reedy, Athey & Grant completed in the first Cow Run sand a test on the George Henry farm. It is a 5-bbl. pumper.

Gassers in Harrison County

The Hope Natural Gas Co.'s test on the S. W. Greene farm in Coal district, Harrison County, is a gasser in the Gordon sand. In Center and Sheridan districts, Calhoun County, this company's tests on the R. M. Marshall and L. C. Collins farms, are gassers in the Big Injun sand. In Center district, Gilmer County, the Hope Natural Gas Co. completed a Big Injun sand gasser on the John R. James farm. In Sherman district, Calhoun County, this company's test on the G. Rice farm has a show of oil in the Big Injun sand. In Center district, the Hope Natural Gas Co.'s test on the Hattie D. Hathaway farm is good for 10 bbls. a day in the Big Injun sand. In Union district, Pleasants County, the West Virginia Oil Co., Ltd., has a dry hole in the Cow Run sand at a test on the E. L. Newland farm. It will be used for air.

In Grant district, Ritchie County, the Penn Royal Oil Co.'s No. 4 on the Lowther Brothers' farm flowed 40 bbls. the first 24 hours after drilled into the Big Injun sand pay. In Courthouse district, Lewis County, T. M. Caine & Co.'s test on the Daugherty farm and the West Fork Oil & Gas Co.'s test on the Raymond farm, are both gassers in the Gantz sand. In Clay district, old territory, the Philadelphia Oil Co. has drilled No. 6 on the J. R. Marsh farm through the Squaw sand and dry. In Courthouse district, Lewis County, the McCall Oil & Gas Co.'s test on the William Watson farm is through the Gantz sand and a fair gasser. In Collins Settlement district, C. F. Malone & Co. have a rig up on the T. Snyder farm and the West Fork Oil Co. has rigs completed for tests on the H. C. Ramsey and E. P. Haymond farms. In Clay district, Monongalia County, the Clay District Oil & Gas Co.'s test on the Thomas Tennant farm has been drilled to the Bayard sand. It is a gasser good for 165,000 feet.

Dry in All Sands

In Clay district, Wetzel County, the Manufacturers Light & Heat Co. has now drilled its test on the H. E. & A. E. Chaney farm through all sands. It is dry, plugged and abandoned. In Liberty district, Marshall County, this company has completed and shot in the Gordon sand a second test on the Andrew Howard heirs' farm. It is a 10-bbl. pumper. In Grant district, Doddridge County, the Hope Natural Gas Co.'s test on the Stephen Stuttler farm is a gasser in the Big Injun sand. In Greenbrier district, the Raccoon Oil & Gas Co. has a 10-bbl. pumper in the Big Injun sand at No. 5 on the James Kelly farm. In Washington district, Calhoun County, the Hope Natural Gas Co.'s test on the A. D. Adams farm is a gasser in the Big Injun sand.

In Clay district, Ritchie County, John McGinnis & Co. have a gasser in the Squaw sand at a test on the Martin McMullen farm. In Murphy district, the Cairo Oil Co.'s No. 2, an old well, on the J. B. & A. W. Lemon farm drilled down to the Big Injun sand, is a gasser. In Union district, Wood County, the Penn Royal Oil Co. has a duster in the Berea grit at a test on the Sarah M. Wilcox farm. In Simpson district, Harrison County, the Grasselli Chemical Co. has a Gordon sand gasser at No. 5 on the M. R. Lodge farm. The Hope Natural Gas Co.'s test on the J. M. Rymer farm in Murphy district, Ritchie County, is a gasser in the Big Injun sand. This company's test on the George W. Davis farm, in Sheridan district, Calhoun County, is a gasser in the same formation. The McCall Oil & Gas Co. has a Big Injun gasser at No. 5 on the Bennett heirs' farm in Center district, Gilmer County. In the same district, the Richter Oil Co. has a 5-bbl. pumper in the salt sand at No. 6 on the B. S. Raybuck farm. In Mannington district, Marion County, the Buffalo Oil Co. has completed its test on the Beaty heirs' farm. It is a very light pumper in the Gordon sand. In Collins Settlement district, Lewis County, the Mud Lick Oil & Gas Co. has a gasser in the Gantz sand on the W. W. Watson farm. In Paw-Paw district, Marion County, the Owens Bottle & Machine Co. has a gasser in the same formation at a test on the J. M. Robinson farm. In the same district, M. W. P. P. S. Co.'s test on the L. M. Lough farm is a gasser in the fifth sand. On Mothens Run, Mannington district, the South Penn Oil Co. has drilled old No. 20 on the E. A. Blackshere farm from the Big Injun to the fifth sand, 3,064 feet, showing for a light oil producer with some gas. In both Marion and Monongalia County, the drilling down of old wells is a feature.

Starting Test Wells

In Grant district, Ritchie County, John Leeton & Co. have a part of the rig material at a location on the C. Lowther farm. In the new Cow Run development in Lubeck district, Wood County, Stout Brothers & Co. have moved in a drilling machine to the location for No. 3 on the W. L. Munchmyer farm. The Hope Natural Gas Co. is hauling rig timbers to

(Continued on Page 80)

Finishing 12" x 14" Bit Steel Blank at 1000-Ton Press

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By Vern T. Whitney

In Tinsley's Bottom, Tennessee, Dafoe and others' No. 2 makes 150 bbls. Seven completions, all producers, in field. Marsh & Shearer get 75-bbl. well in Wayne County, Kentucky; Superior Oil Corp., 40 bbls. Union Gas & Oil, 80 and 50 bbls, North Weir; George McGinley, 49 bbls., Warren County.

COOKEVILLE, Tenn., April 13.—The new producing area in the Tinsley Bottom section of Clay and Jackson Counties, Tennessee, and surrounding territory has every indication of proving to be highly productive, and will probably be the forerunner of other pools in the various counties along the western slope of the Cumberland Plateau. A number of major companies have scouts in the field and a leasing campaign has been proceeding steadily.

Cookeville, on the Tennessee Central Railway, has been the central point for most of the fraternity, and many oldtimers were recognized there, among them L. C. Young, president of the Young Gasoline Co., and an official of the Rex-Pyramid Oil Co.; V. J. Bullitt, treasurer of the Rex-Pyramid; B. J. Munroe, geologist, and J. R. Mace, superintendent for the same organization; C. B. Reynolds, formerly of the Star Drilling Machine Co., recently returned from Mexico, has been in the field for several weeks. J. R. Boller, of the Ohio Oil Co.; C. F. Rowland, of Cleveland, and A. L. Brown, of New York, representing the Sinclair company; A. C. Edenfield, of Arkansas; Otis Winsor, representing Benedum & Trees; Charley Moon, for the White Plains Oil & Gas Co., a Snowden Brothers subsidiary; H. F. Freidrich, of Milwaukee; Joseph Smith, of Lexington, representing the Petroleum Exploration Co.; Mr. Jones, of the Eastern Gulf; Lyman C. Scott, of Toledo; F. W. and G. W. Evans, of New York; Charles Andrus and E. Millet, of the Central Southern Oil Co.; E. V. Fowler and J. M. Welles, Kentucky operaters, and many others.

In Tinsley's Bottom proper, which lies in a horseshoe bend of the Cumberland River, surrounded to a great extent by high hills, four fine producing wells were seen, with twenty-five 250-bbl. tanks full of oil. Within the past few days Dafoe and associates have brought in another large producer, No. 2 on the Draper farm, 850 feet west of No. 1, in the sand below the Pencil Cave, estimated at 150 bbls. No. 1 Draper is a flowing well estimated at 250 bbls. at 420 feet. Pencil Cave was topped at 297 feet and casing was set at 303 feet.

All Completions Producers

A survey of the field shows seven wells have been completed, all producers. On the Williams farm, where the discovery well was drilled, three wells have been completed, all small pumpers. On the Hamp Lynn tract, two-thirds of a mile to the west of the Williams, two wells have been finished, No. 1 good for 40 bbls. at 447 feet, 110 feet below the Pencil Cave, while No. 2 was a big flowing well, starting off at better than 700 bbls. at 429 feet, where the sand below the Cave was topped. On the Draper farm, two-thirds of a mile east and a little south of Lynn, No. 1 is estimated at 250 bbls. at 420 feet, and No. 2, just completed, at 150 bbls. On the Swan place, three-fourths of a mile south of the Draper, and on the opposite side of the Cumberland River, No. 1 was drilled to 626 feet. The hole filled up 50 feet when the bit entered sand, and upon drilling deeper, oil rose rapidly in the hole and the well was shut in until tankage can be secured.

The Dafoes are now drilling No. 1 Ben Hix, 500 feet southwest of the Swan well; No. 3 Lynn, 1,000 feet north of No. 2 on the same farm, and No. 1 Osgathorpe, 2 miles west of the Lynn, on Brimstone Creek. The Young Oil Co. has let contracts for the drilling of seven wells. The first location to be drilled is on the Arms farm, 2½ miles south of Celina and 3 miles north of Tinsley's Bottom, and a rig is now being moved to it.

A. C. Edenfield, of Arkansas, Kansas, has let a contract for the drilling of a 1,200-foot hole on the Spivey farm, quite a way in advance of the new production. The Spivey lies to the west of the Lynn tract and is on the opposite side of the Cumberland River.

V. J. Bullitt, treasurer of the Rex-Pyramid company, has purchased part of the Draper farm from the owners, and his contract calls for the starting of a well within 60 days. Mr. Bullitt states he will drill at least four wells no matter what the outcome. This lease looks like a sure bet as the Dafoes have drilled in two splendid wells offsetting it. The Rex-Pyramid company intends to do considerable drilling in this vicinity in the very near ufture. Its first location will probably be made to the north of the present field, in the vicinity of Celina and Butler's Landing.

The writer has long maintained that the Volunteer State has great possibilities for oil production in large quantities, as the geological characteristics are ideal, and only constructive drilling operations were necessary to show results. The Tinsley's Bottom area is undoubtedly only one of a number of similar pools which will be found by carefully picked tests on the numerous structures plainly to be seen.

Visitors to the new field are much gratified at the excellence of many of the roads, far superior to those in most Kentucky fields, and will facilitate operations.

With reference to transportation for the crude produced, several responsible organizations are now surveying the field, with the idea of putting in pipe lines. The oil from the wells so far drilled is of the highest grade and will bring the Somerset price, which at this time is $2.45 per barrel.

Kentucky Production

Crude petroleum produced in Kentucky during February totaled 531,931.62 bbls., valued at $1,238,359.28, the report of the State Tax Commission showed. The 1 per cent tax, recently held valid by the Court of Appeals netted $5,319.32 to the State treasury. The biggest producer was the Cumberland Pipe Line Co., with 290,060.29 bbls., followed by the Great Southern Refining Co., with 61,405.96 bbls., and the Indian Pipe Line Corp., with 57,458.75 bbls. Lee County led the 27 counties reporting with 151,513.72 bbls., valued at $363,349.70, with Johnson County second with 82,882.54 bbls., valued at $202,354.45, and Magoffin County third with 73,329.06 bbls., valued at $178,025.51.

Week's Work

A brief of the week's work in the Blue Grass State shows 42 completions with 30 producers and a flush of 46 bbls. Compared with the previous week, this shows 10 more completions, 10 more producers, one less dry hole, one more gas well and a drop of 117 bbls. in initial yield. The wells were distributed by counties as follows:

County—	Comp.	Wells	Prod.	Dry	Gas
Barren	10	5	46	5	0
Warren	7	6	37	1	0
Wayne	6	5	132	1	0
Allen	4	4	21	0	0
Johnson-Magoffin	4	3	21	0	1
Owensboro district	3	2	7	1	0
Lee-Owsley	3	0	0	2	1
Lawrence-Johnson	2	2	130	0	0
Simpson	1	1	10	0	0
McCreary	1	1	8	0	0
Estill	1	1	4	0	0
Total	42	30	466	10	2
Last week	32	20	583	11	1
Difference	10	10	117	1	1

Eastern Division

During the past few months the Kentucky River Coal Corp. leased in the neighborhood of 15,000 acres in Perry, Knott and Letcher Counties, in the east end of the State, and intends to do a large amount of drilling in search of gas. Geologists who made reports on these counties were all of the opinion that gas would be found in commercial quantities. These counties have had very little development and if either gas or oil is found in paying quantities they will get a large play by other companies in Eastern Kentucky.

Greenup County is another that will get several tests. L. C. Young has made a location for a test on the T. B. Burke farm, in the northern part of the county in a bend of the Ohio River, 20 miles west of Ashland. Mr. Young, who is president of the Young Gasoline Co., has leased in the neighborhood of 20,000 acres of land in Greenup, and will drill three wells to the Corniferous sand, expected at 1,200 feet. The Berea sand will be found at around 400 feet and another pay at between 700 and 800 feet. Two other locations have been made, one on the Reuben Potter on Leatherwood Creek, and the other on the Baglin tract.

Wayne County

The Beaver sand field of Wayne County came to the fore the pase week with six completions, five of which made producers, increasing the county's production 132 bbls. daily. The best was Marsh & Shearer's No. 3 on the J. A. Brown farm, at Slickford, in District No. 3, which came in making 75 bbls. at 430 feet. No. 2 on the same farm is a 10-bbl. pumper from the Beaver sand.

At Oil Valley, the Superior Oil Corp.'s No. 4 on the Burnett, showed for 40 bbls. from the Beaver sand at an approximate depth of 410 feet.

In District No. 5, Bowden and others' No. 4 Morrow made 6 bbls. from the Beaver sand.

In District No. 2, Bell Brothers' No. 1 Coffee heirs, made 1 bbl. on jack from the Beaver, and the Wood Oil Co.'s No. 25 B. S. Huffaker was finished dry at 450 feet.

In McCreary County, the oldest producing county in the State, Brown and others' made an 8-bbl. strike in No. 1 on the Stearns company lands.

Lee-Owsley Counties

The Petroleum Exploration Co. finished a gasser estimated at 2,225,000 feet daily in its initial test on the Harve Marcum place, in Owsley County. This well was drilled as an offset to a well drilled in some time ago by the Rex-Pyramid Oil

(Continued on Page 72)

Fields of the Central West

By Whit

FINDLAY, Ohio, April 13.—While fairly good weather has prevailed over the Central West fields during the week but few completions were reported, the total being 22, with 12 in the Lima Field, 2 in Indiana, 6 in Illinois and 2 in the Central Ohio area. Only 12 were oil producers, the flush production totaling but 176 bbls., while 10 were dry.

Figuring the flush from the oil producing wells, it shows conclusively that the operator is not getting very far in the way of profits from the development work. Flush production does not prove the production of a well even a few days old, for the majority of them decline rapidly and are hardly worth putting on the pump. The small producers are only worth pumping when connected to a central power already set in the older fields.

Production in Ohio has, of course, taken a heavy drop since 1896, although numerous new extensions have been made to the big field. The State reached its zenith in oil production in 1896, when it showed a production of 25,250,000 bbls. The production for 1924 totaled approximately 6,797,000 bbls., according to reports made by Professor Bownecker, State geologist.

The Trenton Rock area of northwestern Ohio was the heaviest producing formation within the State's borders, but today the deep Clinton sand of Central Ohio is showing by far the best producers. With a better market price for crude there is no doubt that the drill would bring forth in outlying spots a greater production for the current year. New extensions are being opened to the Trenton Rock Field and the same can be said of the Clinton, Big Injun, Berea, Niagara, Newburg, Cow Run and other well known formations.

While the eastern and southeastern part of the State looks inviting and with excellent surface indications in some spots, there is still a mystery as to what the lower formations will divulge. The deep Trenton Rock, around 4,500 feet in Licking County, has shown production in a few wells. As to the Clinton formation wells have been drilled to that producing sand in Mahoning, Columbiana and Stark Counties, without showing. Harrison County has had a deep test to a depth of 5,908 feet, with only a rainbow showing. In that part of the State almost every county has had a Clinton test made with the exception of Monroe, Guernsey, Carroll, Jefferson and Belmont Counties. During the past year a 4,240-foot hole was sunk in Washington County, but did not show anything worth while, not enough to encourage further deep tests.

In the Central Ohio division there are still good wells being found in the Clinton sand in Perry, Hocking, Fairfield, Licking, Holmes, Ashland, Wayne and a few adjoining counties. In the Lima Field the best looking proposition at this time falls upon Hardin County, to the south of the Findlay section of the Trenton Rock, and Paulding County to the north of the Mercer County Field along the Ohio-Indiana State line.

Lima Field

In the Lima Field of northwestern Ohio during the week a total of 12 wells were reported completed, 3 dusters, the others showing a combined flush production of 131 bbls.

The wildcat drilled by Slagel & Johnson on the southwest corner of the Frank Dansig farm, in the southwest quarter of Section 16, Cynthian Township, Shelby County, pumped 20 bbls. the first 24 hours from the Trenton Rock. In the same township, the Ohio Oil Co.'s test, 660 feet from the south and east lines of the Ida M. Short farm, in the north-

(Continued on Page 70)

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Wood:
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HOLDERS—GAS
S-W Kromik Primer
S-W Aluminum Paint
S-W Tank Paint

MACHINERY
S-W Oil Proof Machinery Paint

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S-W Kromik Primer
S-W Oil Station Paint
S-W Metalastic

PIPES—STEEL UNDERGROUND
S-W Ebonol
S-W Plastic Pipe Coating

POLES
Wood:
S-W Pole Paint
S-W Oil Station Paint
Metal:
S-W Kromik Primer
S-W Metalastic
S-W Tank Paint

PORTABLE BUILDINGS
Metal:
S-W Kromik Primer
S-W Oil Station Paint
S-W Metalastic
Wood:
S-W Oil Station Paint

ROOFS
Paper:
S-W Ebonol
S-W Liquid Roof Cement

ROOFS—Continued
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S-W Tank Paints
Galvanized:
S-W Galvanized Iron Primer
S-W Kromik Primer
S-W Tank Paints
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Shingle:
S-W Preservative Shingle Stain

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S-W Aluminum Paint
Bottom:
S-W Ebonol
S-W Elastic Cement Coating
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AMDYCO CORPORATION TAKES OVER PATENTS

The American Dyewood Co. announces that its business in Amdyco has grown to such proportions it has come to the conclusion its customers would best be served by operating its Amdyco interests separate from those of the American Dyewood Co. It has therefore turned over to a corporation known as Amdyco Corp. all its interests in that business, and has assigned to them its rights in various patents, trade marks and everything connected with the Amdyco branch.

The Amdyco Corp. will specialize in foam fire protection, having associated with it as a consulting staff several leading engineers identified in the oil industry and in fire protection. The services it is prepared to render include engineering service on fire prevention and fire protection; inspection service; bulletin service on general fire protection and latest developments; engineering specifications, fire doors, dikes, walls, etc., and safety bulletins for personnel, as well as constructive criticism of contemplated construction work, minimizing fire hazards to obtain best insurance rates, and cooperation with fire insurance representatives.

TANK CAR ORDERS

Standard Tank Car Co. of Sharon, Pa., has received orders from the Hercules Gasoline Co., Los Angeles, for ten 10,050-gallon tank cars; from the Homer F. Wilcox Co. of Tulsa, for two insulated 8,050-gallon cars and from the Canfield Oil Co. of Cleveland for two triple compartment cars.

BUYING OF TUBULAR GOODS VERY FAIR WITH CARE AGAINST ACCUMULATIONS

By B. E. V. Luty

PITTSBURGH, Pa., April 13.—Buying of oil country tubular goods is of very fair proportions, but in a sense is disappointing as it shows no increase over one month or two months ago whereas seasonal increases had been expected. The year opened with everyone expecting very heavy drilling operations and it would take a great deal to justify fully all the expectations. While much drilling is expected, the Mid-Continent Field is not feeling as sanguine as it was a few weeks ago, when premiums were being paid for oil, and before the recent cut in Pennsylvania.

Buying of merchant pipe has continued of fair proportions, about as much tonnage coming to mills as could be expected. Jobbers are keeping well assorted stocks but are careful to avoid any accumulations. All jobbers are acting conservatively since they realize that while prices of tubular goods have been perfectly steady for two years this is no proof as to the future since accidents are always possible.

With much of the line pipe business booked some time ago completed, pipe mill operations have been decreasing, though production of merchant pipe, casing, tubing, etc., is substantially unchanged. The pipe mills were operating at about 90 per cent at the end of February and are now averaging about 75 per cent, with some large producers below that and some small producers above it.

Conservatism Rules

In the iron and steel trade as a whole an extremely conservative attitude exists, not that anyone discerns poor times ahead, as a general outlook, but that there has been heavy production all along the line and recent price advances have been lost so that the general trend in prices has been downward. This makes all business men conservative as to stocks. The retailer is careful and the jobber is careful. The manufacturer in turn wishes to reduce his stocks of raw material. Pipe mills that use purchased skelp are anxious to liquidate their stocks of skelp, which are at below current market prices but with no certainty that market prices will not decline.

A few sales of small lots of Lake Superior iron ore have been made, at prices 50 cents to 66 cents below the formal prices of last season, but those prices were cut during the season, in some cases by as much as 50 cents. Almost all the blast furnaces have ore of their own, or long term contracts, and the amount of iron ore sole season by season for pig iron making is practically insignificant, but the nominal decline in iron ore will probably have quite a sentimental influence on the pig iron market, leading consumers expect still lower prices, just as they did in the case of the recent decline in coke. The pig iron markets have been very dull in the past week. Prices are nominally unchanged but really are not being tested to any extent, and there is a possibility that considerably lower price would be developed if any large inquiries should come out.

Semifinished steel is quotable at a decline, the decline being merely nominal as previous quotations were not supported by actual purchases. The lower market as now quotable occurs from the fact that first quarter contracts for billets at $35.50 to $36 and sheet bars at $37 were by no means specified in full and the mills did not cancel the unspecified tonnages but are now allowing contract holders to specify if they will.

Finished Steel Prices

Finished steel prices in general are not quotably changed. Current prices are not tested by large tonnages being under negotiation, and in some lines prices are supported chiefly by the fact that there are old contracts and if the mills were to cut prices on new business this would simply undermine the contracts and the mill would lose much more than it gained. That is the case with merchant bars at 2.10 cents. In sheets prices a few weeks ago declined below the level of many contracts, but even at that there is not much new buying.

Steel mills are now operating at 85 per cent or a trifle less, against an average of 89 per cent during the first quarter of the year, and further decreases are in prospect, for the recent rate has been very high. Even with further decreases the year's production and consumption promises to be large.

NEW HEAT EXCHANGER

A compact mineral seal oil heat exchanger has been developed by the Griscom-Russell Co. of New York. A compact unit is obtained by a twin arrangement and by the counter current flow of the two oils. All oil connections have been placed at the same end to simplify piping and facilitate bypass connections. The twin arrangement is said to reduce expansion strains and greatly increases the utility and salvage value of the exchanger, as it is easily disconnected, transposted, and erected in new locations to meet changing conditions.

ALL STEEL TRUCK TANK COMES THROUGH MOTOR CAR SHOW FIRE

The whole country read the news of the fire that destroyed the American Royal Exhibit Building in Kansas City while the Kansas City motor car show was in progress. Millions of dollars in models and accessories were destroyed. So far as is known, the only item in the vast exhibition that has been reclaimed and put back into service is a truck tank belonging to the White Eagle Oil & Refining Co. of Kansas City, mounted on its own extended steel partitions and built by the Columbian Steel Tank Co., of Kansas City.

The picture shown was taken the morning after the fire. The truck chassis was virtually melted to the floor as was every other chassis on exhibition including several highly plated chassis reputed to have cost as high as $20,000 each. The tank was removed from the ruins. After a rigid test it was discovered that not a leak developed nor was its strength impaired. After comparatively little overhauling it was mounted on another chassis. The entire renewing cost amounted to only $105, most of which was chargeable to sand blasting, repainting and relettering.

EFFECT OF COLOR ON EVAPORATION SHOWN IN GOVERNMENT EXPERIMENT

By Ludwig Schmidt

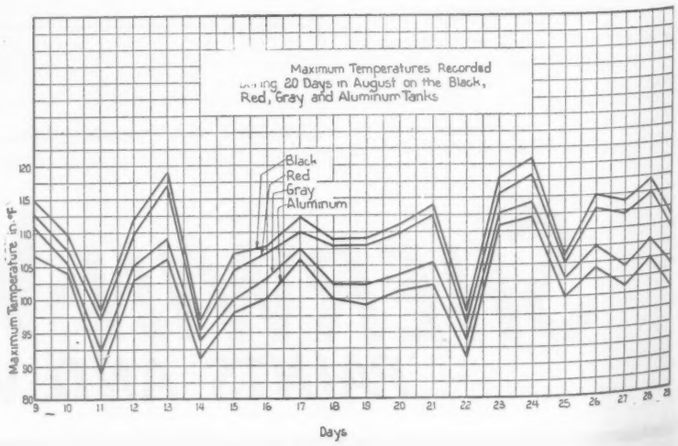
Associate Petroleum Engineer, Bureau of Mines

(In Cooperation With the State of Oklahoma)

Investigation conducted by the Bureau of Mines pertaining to the reduction of evaporation losses of petroleum have shown that such losses may be reduced 70 to 80 per cent by the use of vapor-tight tanks equipped with vacuum and pressure relief valves, and vapor-tight thief hatches. Additional studies have shown that it is often economical to supplement this type of construction with other measures that will reduce evaporation losses still further. Water-cooling systems, insulation, and light-colored paints are the measures most often used in connection with vapor-tight tanks. Painting with light-colored paints probably is employed in the greater number of cases.

In order to make a test which would cover as wide a range of colors as possible, with the facilities available, four 55,000-bbl. tanks were painted black, red, battleship gray, and aluminum, respectively. Black, red and battleship gray are colors much used in the oil industry. Aluminum was selected because it gave

(Continued on Page 66)



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MEN KNOWN IN OILDOM

Fred H. Wickett

Fred H. Wickett, who was chosen one of the members of the board of directors of the Pan-American Eastern Petroleum Corporation and who succeeds E. L. Doheny as chairman of the board of the Pan American Petroleum & Transport Company, was actively engaged in the practice of law in Chicago until 1917. At that time he organized the Dixie Oil Company and has given all of his time since to the oil business. He was elected president of the company at the time of its organization, a position he still holds. This company was sold in 1919 to the Standard Oil Company of Indiana. The Dixie Oil Company, under his direction, purchased the R. H. Smith holdings in the Wewoka Pool.

Mr. Wickett is a very close friend and business associate of Colonel Robert W. Stewart, chairman of the board of the Standard Oil Company of Indiana, and has been associated with him in the negotiations that led up to the purchase by the Indiana organization of control in the Mexican properties of the Doheny interests. He was for a brief time president of the Sapulpa Refining Company and is credited with being the Standard of Indiana's crude oil executive as head of producing subsidiaries of that organization. He now becomes one of the leading figures in the petroleum industry and Colonel Stewart chooses well those in whom he places such confidence.

Mr. Wickett was born at St. Thomas, Canada, about 52 years ago. He has offices at 231 La Salle Street, Chicago, and lives, with his family, at 229 Lake Shore Drive, that city.

PERSONAL PARAGRAPHS

M. C. French, veteran oil producer of Okmulgee is seriously ill from an attack of influenza.

* * *

M. V. Rushmore, land man for the Gypsy Oil Company at Okmulgee, Okla., spent the week end in Tulsa.

* * *

Guy H. Woodward has been added to the legal staff of the Independent Oil & Gas Company of Okmulgee, Okla.

* * *

H. C. Lindemuth, manager of the International Supply Company at Holdenville, was a Tulsa visitor on Tuesday.

* * *

M. H. Bostick has resigned as manager for the Gulf Production Company in the Goose Creek Pool to engage in the production business in the Arkansas fields.

C. H. Andrus and E. Millett, officials for the Central Southern Oil Company, are in Liberty, Tenn., investigating prospects.

* * *

A. J. Byles, president of the Tide Water Oil Company, was in Tulsa and other Mid-Continent points during the past week.

* * *

E. E. Robbins of the McCord Radiator Manufacturing Company is visiting North Texas and other Mid-Continent points in the interest of his firm.

* * *

A. B. Crow, formerly of Tulsa, is in the Rocky Mountain region looking over the country for a location as agent for several new tools in the oil field equipment line.

* * *

John J. Callahan, for four years land man for the Roxanana Petroleum Corporation at Okmulgee, Okla., has resigned, and is succeeded by J. F. McCrabb of Tulsa, Okla.

* * *

W. E. Wood, vice president, and A. H. McLain, counsel, of the Kingwood Oil Company of Okmulgee, Okla., were visitors in Tulsa, attending to legal business of the company.

* * *

A. M. Tucker, manager of the export department of the Hughes Tool Company, with offices in New York, has returned from a trip to London, Paris and the Rumanian fields.

* * *

T. W. Wells, supply man for the Rocky Mountain region of the chain driven sand reel, was in Casper, Wyo., conferring with oil operators regarding the situation for the coming season.

* * *

Adrian Moore, manager of the Rycade-Amerada Corporation in Texas, Louisiana and Arkansas, with Houston headquarters, is in El Dorado and the Smackover district for the present.

* * *

W. P. Simmons, copartner with E. M. Treat, has left Bowling Green, Ky., for a business trip to Buffalo, after which he will leave for Texas, New Mexico and other points where he is interested.

* * *

John Lind, former governor of Minnesota, and special envoy to Mexico during the Wilson administration, has entered the shallow sand section of Milam County as an operator and will drill several tests. His son is identified with him.

* * *

G. W. Evans, secretary and treasurer of the Evans Oil Corporation, has been in Bowling Green, Ky., with his brother, who is president of the company, on a tour of inspection of the company's holdings in the Warren County fields.

* * *

W. W. Downer has been appointed Wisconsin representative for the Randolph Petroleum Company of Tulsa and Chicago. He formerly was with the Champlin Refining Company and later with the Lindsay-MacMillan Company of Milwaukee.

* * *

A. P. Garland, who for several years has been in the employ of the Standard Oil Company of Louisiana, in the legal department at Shreveport, La., has severed his connection with that company and will engage in the private practice of law.

* * *

O. H. Muller, Jr., of the Chicago office of the Pure Oil Company, has been chosen special representative of the distributing division of the company. He will have charge of the work to increase the sales of the company. R. P. Baker will fill Mr. Muller's former position at Chicago temporarily.

* * *

H. M. Hill of the Galena-Signal Oil Company's New York office has opened offices for that company in the Penobscot Building at Detroit, Mich. The district covered from the Detroit office will include the jobbing trade of Michigan, Illinois, Indiana and northern Ohio.

* * *

Lew Klein, district manager of the Continental Supply Company for the Rocky Mountain region, is to leave Casper, Wyo., shortly for a new post with the Continental in South America. He will be stationed at some point in Venezuela where he will superintend the importation of oil field equipment for the work in the fields.

J. Brian Eby, formerly of the fuel section of the United States Geological Survey, has accepted the position of district geologist for the Roxana Petroleum Corporation in West Texas and parts of east New Mexico, and has headquarters at San Angelo, Tex.

* * *

J. W. Ryan, former State conservation officer at Ardmore, has been transferred to the Holdenville district. Ben Mobley has succeeded Mr. Ryan at Ardmore. J. E. Amos, former officer at Holdenville, goes to Blackwell, succeeding C. L. Roff, resigned.

* * *

N. A. C. Smith, petroleum chemist of the United States Bureau of Mines with headquarters at Bartlesville, Okla., spent about two weeks at the San Francisco office of the bureau in connection with lubricating oil tests being conducted in the dynamometer laboratory at that station.

* * *

Mayor James M. Curley of Boston and Mark Sullivan, political writer, spent two days in Shreveport, La., recently inspecting the well drilled by Senator L. V. Ulrey and associates in De Soto Parish. Mr. Curley, who is president of the Hibernia State Bank, is interested with other citizens of Boston in the well and was gratified with the prospects of a new oil field in this territory.

* * *

Earl H. Sherrod has been appointed assistant superintendent of the pipe line department of the Shaffer Oil & Refining Company and will have charge of the Bristow, Cromwell, Wewoka and Okmulgee territory with headquarters at the Midway pump station of the company southwest of Bristow. Fred Way continues as superintendent of the pipe line department with headquarters at Drumright, Okla.

* * *

Charles H. Osmond, for the past six years engaged in various technical capacities with the Atlantic Refining Company, has announced his association with Roderic Crandall to form the firm of Crandall & Osmond to engage in practice of general petroleum engineering, specializing in reports on oil companies, domestic and foreign, regarding refinancing, improvements in refining methods and cracking processes. Mr. Osmond will be located in the Whitehall Building, New York City.

* * *

E. L. Moore, president of the Independent Oil & Gas Company has returned to Okmulgee, Okla., his headquarters, after a visit in New York on business connected with his company. Mr. Moore recently refused reelection as president of the Okmulgee District Oil & Gas Association on the ground that the honor should be passed on to another, and he had the satisfaction of seeing Wilford E. Wood of the Kingwood Oil Company, chosen as his successor, assuring the continued success of the organization.

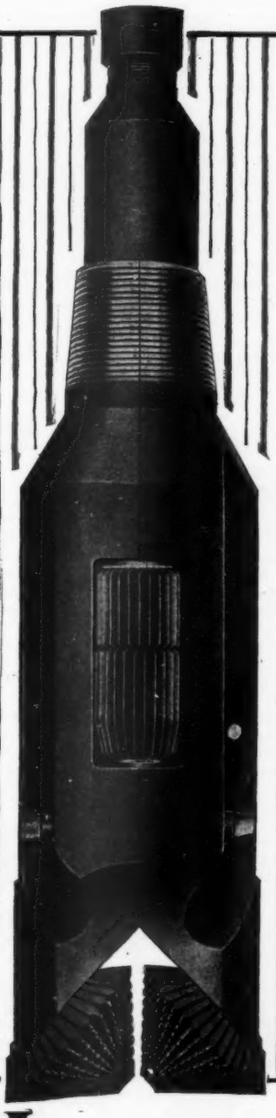
* * *

Colonel Robert W. Cohen, a director of the Royal Dutch Shell Companies; Waley Cohen, of Cohen, Cazenave & Co., and P. M. Fowlie, all of London, made a visit of inspection of Shell Company properties in California, being accompanied by G. Leigh-Jones, general manager of the Shell Company, and W. C. McDuffie, vice president and manager of production, recently returned from England. The party visited Houston last week and continued an inspection of the Roxana Corporation's property in Texas and Louisiana.

* * *

Among the oil men visiting Bowling Green, Ky., recently were W. H. Fitzgerald of Columbus, Ohio, vice president of the Petroleum Exploration, who is making a survey of that company's holdings, and Albert Brown of New York, who was the guest of F. W. and G. W. Evans of the Evans Oil Corporation. Mr. Brown is interested in the Barnsdall Corporation, and was vice president of the International Barnsdall Corporation. He spent most of 1923 around the Caspian Sea heading a party of five engineers investigating the Mosul district and the Russian oil fields. Mr. Brown started his career in the California Midway Field. He spent eight years in the Tampico Field of Mexico, and was one of the officials of the Big Heart Producing & Refining Company, sold to the Barnsdall Corporation in 1921. At present he is operating settled production he owns in Kansas.

BUY A BIT-ONLY ONCE



HUGHES SIMPLEX ROCK BITS
-Last Indefinitely

The Hughes Simplex Rock Bit is so designed that no part of the bit head is exposed to the bottom of the hole.

When worn by long use or damaged by accident, Hughes Rock Bit Heads can be repaired like new at small cost in one of the three

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Houston, Texas Los Angeles, Calif.
Oklahoma City, Okla.

Stocked and Sold by Supply Stores Everywhere

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NEW YORK CITY

NATURAL GAS DEVELOPMENTS

NATURAL GAS AND SUPPLY MEN PLAN BIG TIME AT ATLANTIC CITY MEET

A program of four days, filled to the brim with activity, and not all of it hard, cold business routine, has been completed for the annual convention of the Natural Gas Association of America, to be held, in conjunction with the Natural Gas Supply Men, May 18, 19, 20 and 21, at Atlantic City, N. J.

The convention opens Monday morning, May 18, with a meeting of the technical and research committee, in the Traymore Hotel. This committee, of which H. C. Cooper is chairman, will hear reports from subcommittees on gas measurement, utilization and transportation. On Monday afternoon the Natural Gas Supply Men will hold their annual meeting on the Steel Pier. Monday evening the board of directors of the Natural Gas Association of America will meet at the Traymore Hotel to receive reports of the secretary-treasurer, William B. Way of Pittsburgh, of the chairman of the technical and research committee and to appoint the committees on place of meeting, final resolutions, nominating committee and to transact other business.

The supply men will entertain Monday night with a typical seaside program. They have obtained the Hygeia Pool for the evening, where they will put on a series of swimming, diving and other aquatic contests in which swimmers of international fame will compete, and perhaps a few gas men.

The convention proper will open Tuesday morning on the Steel Pier. Subjects of vital importance to men of the gas industry of America will be presented and discussed. Chief Engineer Kettering of the General Motors Co., who has an international engineering reputation in the motor world, will speak on the subject of "Heat," and the fundamental purposes involved, which are exceedingly vital at this time, particularly to all of the companies selling natural gas for heating purposes.

P. G. Gossler, chairman of the board of directors of the Columbia Gas & Electric Co., will speak on a subject to be announced later. Henry L. Doherty, head of the Henry L. Doherty Co. and the Cities Service Co., will talk on "House Heating and the Industrial Gas Business, and Their Relations." This subject will cover many interesting phases of the gas business, particularly stressing how to hold business now possessed and how to build for the future. The committee is arranging to have a practical operator discuss matters pertaining to drilling of wells and other subjects of interest to the industry.

The annual banquet will be held on Wednesday evening at the Traymore Hotel and promises to be the most interesting affair of its kind the association has ever held. There will be speakers of national prominence and a program of entertainment unparalleled in national gatherings of the association.

Exhibitors who have already taken space for the meeting of the Natural Gas Supply Men., Inc., include:

The Bristol Co., Waterbury, Conn.; C. L. Bryant .Corp., Cleveland, Ohio; Chaplin-Fulton Manufacturing Co., Pittsburgh, Pa.; Cleveland Gas Meter Co., Cleveland, Ohio; Continental Supply Co., St. Louis, Mo.; C. & G. Cooper Co., Mt. Vernon, Ohio; Combustion Utilities Co., New York; S. R. Dresser Manufacturing Co., Bradford, Pa.; Duquesne Burner Service Co., Pittsburgh; Equitable Meter Co., Pittsburgh; Edwin H. Fitler Co., Philadelphia; The Foxboro Co., Foxboro, Mass.; Frick & Lindsay Co., Pittsburgh; Garlock Packing Co., Palmyra, N. Y.; Gas Engineering & Construction Co., Tulsa; General Gas Light Co., Kalamazoo, Mich.; Harrisburg Pipe & Pipe Bending Co., Harrisburg, Pa.; Hays Manufacturing Co., Erie, Pa.; C. M. Heeter Sons & Co., Inc., Butler, Pa.; Helme & McIllhenny, Philadelphia; The International Derrick & Equipment Co., Columbus, Ohio; Jarecki Manufacturing Co., Pittsburgh; A. Leschen Sons & Co., St. Louis, Mo.; Macwhyte Co., Kenosha, Wis.; Metric Metal Works, Erie, Pa.; Lee C. Moore & Co., Pittsburgh; National Supply Co., Toledo, Ohio; National Tube Co., Pittsburgh; Oil Well Supply Co., Pittsburgh; Pittsburgh Meter Co., Pittsburgh; Pittsburgh Valve, Foundry & Construction Co., Pittsburgh; Radiant Heat Corp. of America, New York; Robinson Packer Co., Tulsa; Sprague Meter Co., Bridgeport, Conn.; W. P. Taylor Co., Buffalo, N. Y.; The Titeflex Metal Hose Co., Newark, N. J.; Welsbach Co., Gloucester City, N. J.; Worthington Pump & Machinery Corp., Buffalo, N. Y., and Westcott Valve Co., Seneca Falls, N. Y.

HEARING ON INCREASED QUINTON GAS RATES

OKLAHOMA CITY, Okla., April 11.—A hearing on a petition for an increase in gas rates filed by the Quinton Relief Oil & Gas Co. of Quinton, Okla., has been set by the Corporation Commission for April 21.

The company receives 6 cents per 1,000 feet from the McAlester Gas & Coke Co. It asks that it receive 8 cents for gas produced in the Quinton Pool and 10 cents for that produced in the Blocker Pool where drilling and equipping wells is more expensive. It recites that it received a gross of $33,000 for gas sold in 1924, that it netted, exclusive of depletion and depreciation, $22,000, that it expended $14,000 in drilling and equipping new wels, and that its net income is not what it should receive in the proper course of business. The gas supply is gradually being reduced, the petition says, and the cost of production constantly increasing.

KANSAS GIVES CHARTER TO WICHISON GAS CO.

TOPEKA, Kan., April 11.—The Kansas charter board has granted a charter to the Wichison Industrial Gas Co. of Delaware and Hutchinson, Kans. Emerson Carey, C. M. Williams and D. C. Martindell, of Hutchinson, are the incorporators.

This is the distributing company for a gas company now building a pipe line from the Deer Creek fields in Oklahoma to Wichita and Hutchinson.

The H. L. Doherty interests recently obtained possession of the gas distribution systems of Pittsburg, Wichita, Newton and Hutchinson. Each of the systems has been incorporated into a separate company which the Cities Service Co. owns.

The Wichison Industrial Gas Co., while intended primarily as a distributing system for natural gas, entirely to industrial organizations using large quantities, may enter the domestic gas field.

The pipe line should be completed within a few months. In the meantime, the distributing company expects to complete its lines to the mills, salt plants and other industries desiring to use gas for fuel.

The company will apply to the public service commission shortly for a certificate of convenience and authority to transact business.

OIL AND GAS PROSPECTS IN MILLER HILL-LAKE ANTICLINE IN WYOMING

Gas was found in large quantity in two wells drilled in the Hatfield Dome, 10 miles south of Rawlins, Wyo., in the summer of 1924, when the quick sale of the gas and the construction of a pipe line from the wells to the refinery at Parco, 10 miles east of Rawlins, attracted considerable attention.

During the summer A. J. Collier and E. T. McKnight, geologists of the Department of the Interior, made a reconnaissance survey of the Lake Valley-Miller Hill anticline in a search for possible oil and gas.

The Miller Hill-Lake Valley anticline is a single elongated curving fold that plunges steeply northeasteward and is rendered somewhat irregular by domes and terraces along it. The north end of the part of the anticline that lies in Lake Valley is well marked topographically for about 6 miles by steep bluffs of Mesaverde sandstone on its east and west sides, but in its southern part, where the soft Steele shale is the only surface rock, it has no striking topographic expression. The Miller Hill dome is a gravel-covered plateau that stands about 1,000 feet above the surrounding area.

The Hatfield Dome

The Steele Shale in Lake Valley contains many beds of sandstone and hard shale, the outcrops of which form low hog-back ridges. The altitude of these beds, as determined by careful surveying, indicates the presence of the Hatfield Dome.

Some wells were drilled for oil in Lake Valley about 1915, but no records of them were available. One of these wells, drilled near the lake, in Section 26-20n-88w, probably in 1915, is reported to have reached the Muddy sand at a depth of 4,240 feet. In 1923 a well drilled on the dome, in Section 2-19n-88w, by F. H. Hatfield, struck gas at three horizons and stopped in either the Muddy sand of the drillers or the upper part of the Cloverly formation, at 3,954 feet. The initial production of gas was estimated at 21,000,000 feet a day. The second well, one-fourth mile north of the first, in Sec. 35-20n-88w, was completed in 1924 and is probably as productive as the first. Further drilling will be necessary to determine the limits of the productive area, but the structure contour lines indicate that it does not extend more than 1½ miles north and south and three-quarters of a mile east and west.

On the Hatfield Dome a well should be drilled to the top of the Chugwater (?) formation (a depth of about 4,350 feet) to determine whether the deeper sands also carry gas or oil. The area of Steele shale, which extends about 3 miles north of the Hatfield Dome, should be tested by deep wells drilled along the crest of the anticline. One of these wells should be drilled near the E half of Section 23-20n-88w. Drilling can be done much more cheaply in this region now than formerly, for water is available from the newly constructed main that passes from Sage Creek through Lake Valley to Rawlins. Gas for fuel is obtainable from the wells on the Hatfield Dome.

The Goode Terrace

In the Goode terrace, in Sections 26 and 35-19n-88w, and Section 2-18n-88w, where the Niobrara shale crops out, the crest of the anticline plunges about 300 feet to the mile, whereas north and south of this terrace it plunges at least 1,000 feet to the mile. Nearly all except the northern part of the Goode terrace is covered by gravel and alluvium, and a slight reversal of dip or a cross fault may exist in the area of supposed flattening.

The Goode well, drilled near west line of Section 34-19n-88w, in 1919, reached a depth of 1,885 feet and found water in the so-called Wall Creek, Muddy, and Cloverly sands. In 1924, this well was yielding a strong flow of water that contained considerable quatities of gas. This gas probably comes from the Muddy sand of the drillers, which was encountered at a depth of 1,130 feet. Late in the summer of 1924, a small drilling rig was being set up about three-quarters of a mile northeast of the Goode well near the axis of the terrace.

The Miller Hill Dome

The Miller Hill Dome extends from Section 21-18n-88w, southwest to about Section 9-17n-89w. South of Section 10-17n-89w, where the rocks dip rather steeply to the south, no outcrops were examined, but a map published by the Geological Survey in 1910 indicates that the fold plunges sharply to the southwest in Township 17 north, Range 89 west, and that within a few miles the Cloverly formation lies about 4,000 feet below the surface. Much of the surface of the dome is covered by Tertiary Bishop conglomerate and the structure is only approximately determinable. South of Muddy Creek, in Section 33-18n-88w, and Section 6-17n-88w, either the upper or lower member of the Cloverly formation is exposed and shows gentle dips southeastward. On Rock Falls Creek, in Section 25-18n-89w, an exposure of apparently the same sandstone dips gently northward. At the southwest end of the dome, for about 2 miles in Sections 2, 3, and 4-17n-89w, not far from the axis of the dome, Muddy Creek is deeply entrenched in the Chugwater (?) formation. On Littlefield Creek, in Section 9, 10, and 17-17n-89w, there are outcrops of the formations from the Chugwater (?) to the Frontier inclusive. At the northeast end of the dome of the Mowry shale is the lowest formation recognized.

This dome, which has a closure of more than 1,000 feet and a length of possibly 6 miles, might appear to be an ideal structure for holding oil, but as the bedrock is nearly everywhere covered, extensive faults or other structural irregularities may be concealed, and it is even possible that the dome may be a buried laccolith, a type of fold that seldom if ever contains oil or gas.

The Chugwater (?), Embar (?), and Tensleep formations contain the only

(Continued on Page 76)

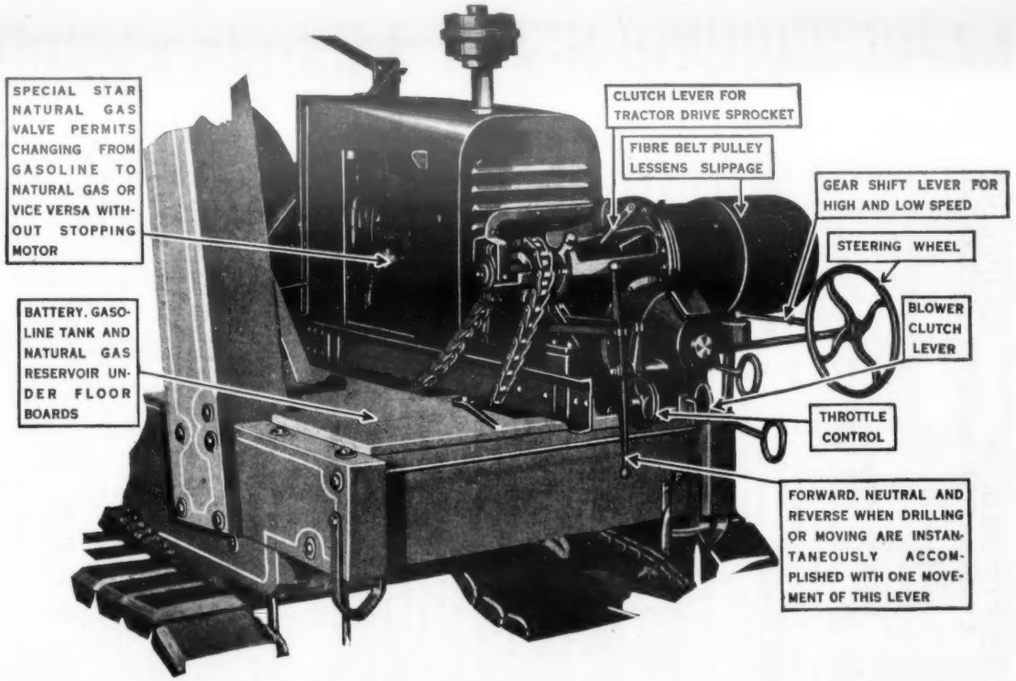
OIL IN GAS TO WARN OF LEAKS BY SNEEZES

BALTIMORE, Md., April 11.—At the meeting of the American Chemical Society, scientists were told of a new oil developed from common red pepper, that can save many lives now lost through asphyxiation. If this oil, called "capsaican" is introduced into the gas mains, its presence is not noticed as long as the gas is properly burned. But if any one leaves a gas burner turned on, accidentally or otherwise, without burning the gas or if there is a gas leak in the house so the gas is not burned, the oil will make all persons in the gas filled room immediately sneeze so violently that they will dash out for relief in the fresh air.

TO DISTRIBUTE GAS

TOPEKA, Kans., April 11.—Representatives of the Empire Natural Gas Co. have applied to the State Public Service Commission for permission to operate local distributing companies at Wichita, Hutchinson and Newton. Charters for the proposed concerns were granted last week by the State Charter Board.

Great New STARS Most Economical Machines For Cleaning Out and Drilling


SPECIAL STAR NATURAL GAS VALVE PERMITS CHANGING FROM GASOLINE TO NATURAL GAS OR VICE VERSA WITHOUT STOPPING MOTOR
BATTERY, GASOLINE TANK AND NATURAL GAS RESERVOIR UNDER FLOOR BOARDS
CLUTCH LEVER FOR TRACTOR DRIVE SPROCKET
FIBRE BELT PULLEY LESSENS SLIPPAGE
GEAR SHIFT LEVER FOR HIGH AND LOW SPEED
STEERING WHEEL
BLOWER CLUTCH LEVER
THROTTLE CONTROL
FORWARD, NEUTRAL AND REVERSE WHEN DRILLING OR MOVING ARE INSTANTANEOUSLY ACCOMPLISHED WITH ONE MOVEMENT OF THIS LEVER

For years oil men have asked for a drilling machine that would lower the cost of drilling and cleaning out. That would eliminate all or part of such costly items as moving expense, fuel, water, labor, and time.

Months of patient Star development work has solved the problem. Stars No. 28ST and 30ST Super-Tractors are the answer. Note carefully how these new Stars reduce and in some cases cut off entirely the above items of expense.

***Moving Expense*—being tractor machines, they move under their own power and tow wagons. No teaming is necessary.**

***Fuel*—the burning of oil, gas or coal in boilers is eliminated. A moderate amount of gasoline is all that is needed to operate these four cylinder Star Super-Tractors. And where natural gas is available the cost of operating them is cut to almost nothing by the use of the Star Natural Gas Attachment. The operator changes from gasoline to gas and vice versa without stopping the motor. Both fuels used at any time.**

***Water*—a small amount needed only for radiator and for drilling purposes. Water for boilers eliminated.**

***Labor*—no boiler to fire. Simply push the electric starting button and the machine is in operation. Plenty of light too, for night work provided by an electric lighting system.**

Powerful Waukesha Ricardo Head 4-cylinder motor gives you all the power you ever had with steam engines, and more. Runs as smooth and velvety as steam.

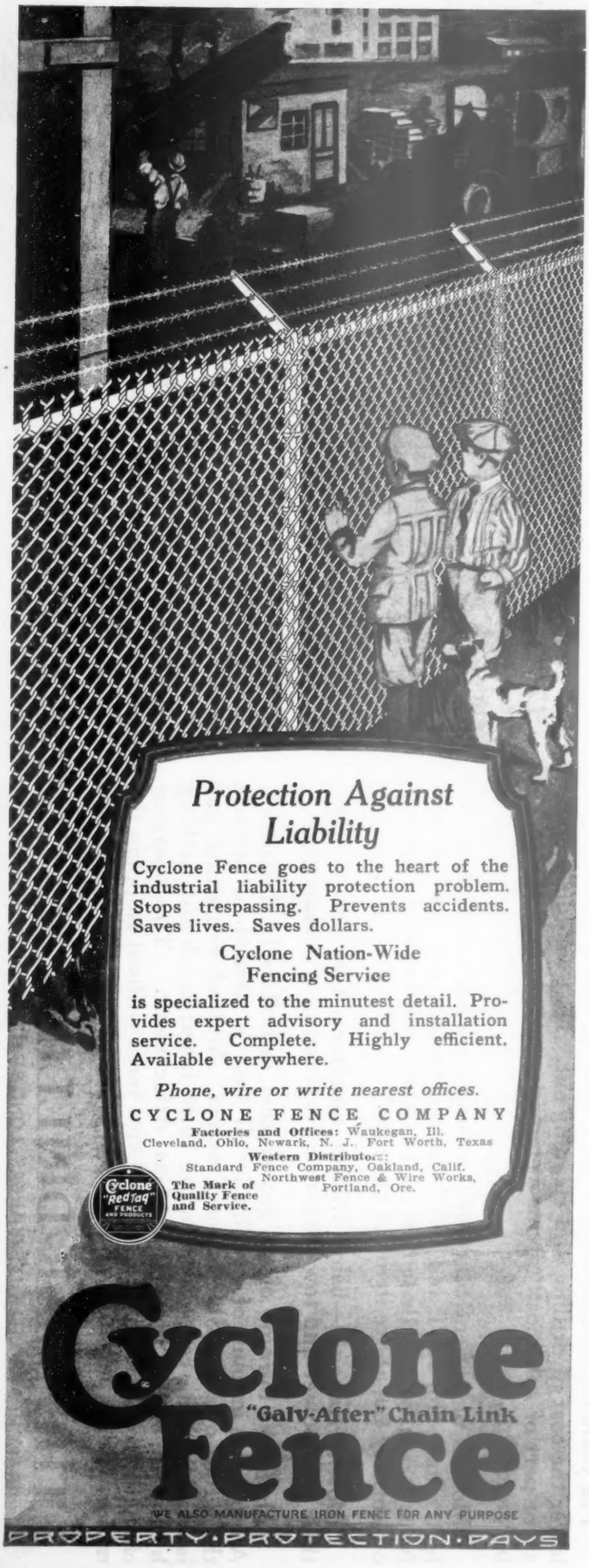
Star Reversing Transmission gives you forward, dead center and reverse just like a steam engine. Reversing is instantaneous. The engine with the combination of two speeds forward and two speeds reverse is almost non-stallable.

Each of these new Stars is equipped with Super-Tractor wheels having 7 sq. ft. of ground contact enabling them to travel over any kind of country.

Bulletin No. 16 giving complete information should be in the hands of everyone interested in cutting the cost of cleaning out and drilling. Write for it.

THE STAR DRILLING MACHINE COMPANY, AKRON, OHIO

BRANCHES AT CHANUTE, KANSAS; LONG BEACH, CALIFORNIA; PORTLAND, OREGON. EXPORT OFFICE—2 RECTOR STREET, NEW YORK CITY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Cyclone Fence goes to the heart of the industrial liability protection problem. Stops trespassing. Prevents accidents. Saves lives. Saves dollars.
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is specialized to the minutest detail. Provides expert advisory and installation service. Complete. Highly efficient. Available everywhere.
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WE ALSO MANUFACTURE IRON FENCE FOR ANY PURPOSE
PROPERTY·PROTECTION·PAYS

EFFECT OF COLOR ON EVAPORATION SHOWN

(Continued from Page 58)

the most satisfactory results in the laboratory tests.

Description of Tanks

The tanks used in this test were each of 55,000 barrels capacity. The roofs were of wood covered with 22-gage galvanized iron sheets crimped to form vertical joints one way and flat seams at right angles. All seams were riveted and soldered. The roof was bolted to the top agle, using a lead gasket to make a gas-tight joint. The last coat of paint was applied after the tanks were filled with oil. The roof of each tank was painted at that time.

The tanks were filled with fresh Burbank crude pumped directly from vapor-tight lease stock tanks. In no case did the oil go through any intermediate gathering station tanks. The average gravity of the crude used was 37.4 degrees A.P.I., and had an average gasoline and naphthat content of 29 per cent, by the Bureau of Mines, Hempel method.

The comparative tests were started in January, 1924, and extended until January of this year. Samples of the oil were taken monthly, and the tanks were gaged at similar intervals. Throughout the summer and fall months recording thermometers were used on each tank to record the vapor temperatures. Temperatures of the oil were also observed at regular intervals.

Results of Test

Results or comparative evaporation tests on four 55,000-bbl. crude oil storage tanks, painted black, red, gray and aluminum, respectively:

Tank color—	Initial Gage Bbls.	Evapo. Loss in One Year Bbls.	Loss in One Year Pct.	Grav. in One Year °A.P.I.
Black	52058	649	1.24	.6°
Red	53294	609	1.14	.5
Gray	53192	547	.99	.3
Aluminum	53418	447	.83	.2

Although this test was not conducted primarily to determine the lasting qualities of the various tank paints, an inspection of the paint was made after the test and, as far as the writer could determine, the paints on all of the tanks were in about the same condition. This point is of material importance to the operator, for many consider that light paints do not have the wearing qualities of dark tank paints. These tests indicate that the saving with the light paint, approximating 200 bbls. per year per 55,000-bbl. tank, would warrant giving the tank one color coat every year if necessary. In fact the writer has been informed by several refiners that it is customary for them to give each of their gasoline tanks one color coat every spring, and that the saving in evaporation more than pays for the additional cost. The writer has noted several instances where light-colored paints have held up for several years without losing the original color.

HOLDING HEARINGS ON TEXAS BOUNDARY CASE

AUSTIN, Tex., April 11.—Attorney General Dan Moody has been advised that the Texas-Oklahoma Boundary Commissioners will resume locating and marking the boundary line between Texas and Oklahoma at various places along the Red River in 11 Texas counties from the one hundredth meridian near Quanah to the west line of Arkansas, near Texarkana. This covers a distance of about 600 miles.

It is considered important that people claiming title to land in these avulsive areas along the Red River appear before the boundary commissioners and furnish definite information looking to the identification and location of the boundary cut bank of the river, and thereby assist in establishing the land titles in these avulsive areas.

The boundary commissioners held their first public hearing in Wichita Falls on April 7. Upon the conclusion of this hearing it is their present program to hold the next hearing in Vernon, then in Quanah, then in Henrietta, then in Montague, and then in Gainesville. Information is that the commisioners will then continue to hold the hearings at points farther down the river.

HOLMES MADE SUPERINTENDENT

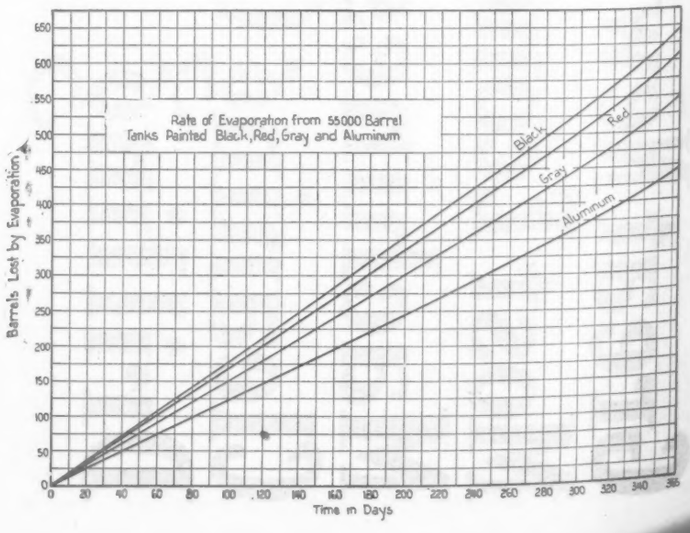
W. K. Holmes has been appointed superintendent for the Casper refinery of The Texas Co. to succeed the late Frederick B. Capen. Mr. Holmes is also superintendent of the company's plant at Tulsa, Okla. He will divide his time about equally between Casper and Tulsa. Mr. Holmes is a brother of the vice president in charge of refineries, R. C. Holmes, who has headquarters in New York City.

ENGINEERS PUBLISH BOOK

A valuable oil field book entitle "Petroleum Engineering," has been written by Robert W. Phelps and Francis W. Lake, Union Oil Co. of California petroleum engineers, at Brea, Calif. The volume, which is of pocket size, being only three-quarters of an inch thick, contains 574 pages. It contains not only general and applied petroleum geology brought up to date but also the many complicated drilling and production problems and their solutions, as determined by actual practice.

NEW MEXICO REFINERY

FARMINGTON, N. M., April 11.—The Continental Oil Co. and the Munos interests have completed their crude oil refinery at Farmington and the first run of gasoline was made recently. The plant has a capacity of 500 bbls. of crude daily. Samuel Hopkins has been installed as manager, following the departure of Dr. F. E. Knoch, who superintended construction of the plant.



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Liquid Safety Valves and Gauge Hatch and companion tank safety and conservation equipment.

Westcott Orifice Meters (complete stock of repair and replacement parts, including flanges and discs) and Metric Ironcase Meters and Metric Drilling Well Meters.

Meriam Shock Absorbers and companion line of Meriam products.

MacDonald 2 Lt. 3 Diaphram Meters equipped with 4 purging cocks for laboratory and charcoal testing.

Chaplin-Fulton High and Low Pressure Regulators. Davis Supersensitive Relief Valves and Casinghead Regulators.

Complete Stock of Bristol Charts and Recording Gauges.

Kreb's Leveling Saddles, for Use With Orifice Meters.

That MERIAM products are the established preference of Oil Engineers is eloquently told by their sales records. Every year the volume of business grows on our distribution of MERIAM Manometers, Draft Gauges, Shock Absorbers, Flow and Test Meters, etc.; Engineers tell us that they have become indispensable to the industry.

Every MERIAM Instrument bespeaks the years of manufacturing experience which has given their makers an invaluable insight into Oil Industry needs and has equipped them to design with these needs in mind; the result is that every MERIAM product meets a definite need exactly and thoroughly.

MERIAM type "A" Flow Meter

The Meriam Flow or Test Meters are also Indicating Meters which will furnish you with accurate information as to the flow of Gas, Water, Oil, Air or anything else that can be measured.

Hundreds of these Meriam Meters are used in the manufacture of gasoline from natural gas; one meter shows the exact amount of gas flowing to the Absorption Tower and another shows the amount which is being sprayed in the top of this same tower for the absorption of the gasoline vapor out of the natural gas. Type "A" is cast of semi-steel and provided with a somewhat larger Mercury Wall than type "B." The bottom of type "A" is threaded to fit a 2-inch Standard Pipe Support.

WESTCOTT & GREIS
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Dallas TULSA Los Angeles
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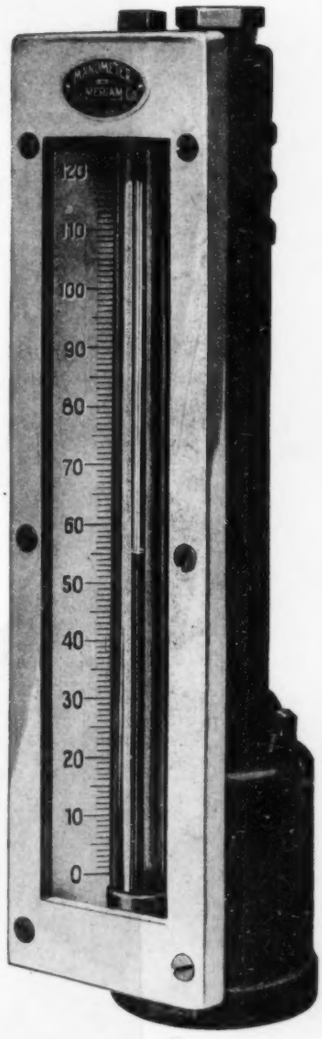
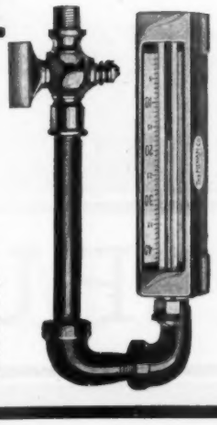


Meriam Hydrometer Pot

Thermometer is in direct contact with liquid long enough that it has reached True Temperature by the time the Hydrometer is taken. Excess oil runs out of top into cup below. Cylinder is made of metal.

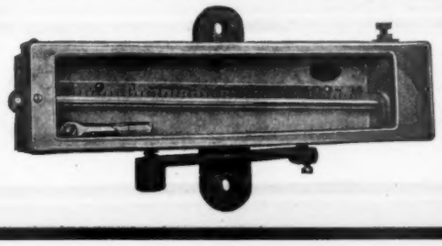
Direct Reading Manometers

These are direct reading Manometers and by reason of the careful machining of their parts the instruments are accurate and the readings are directly taken.



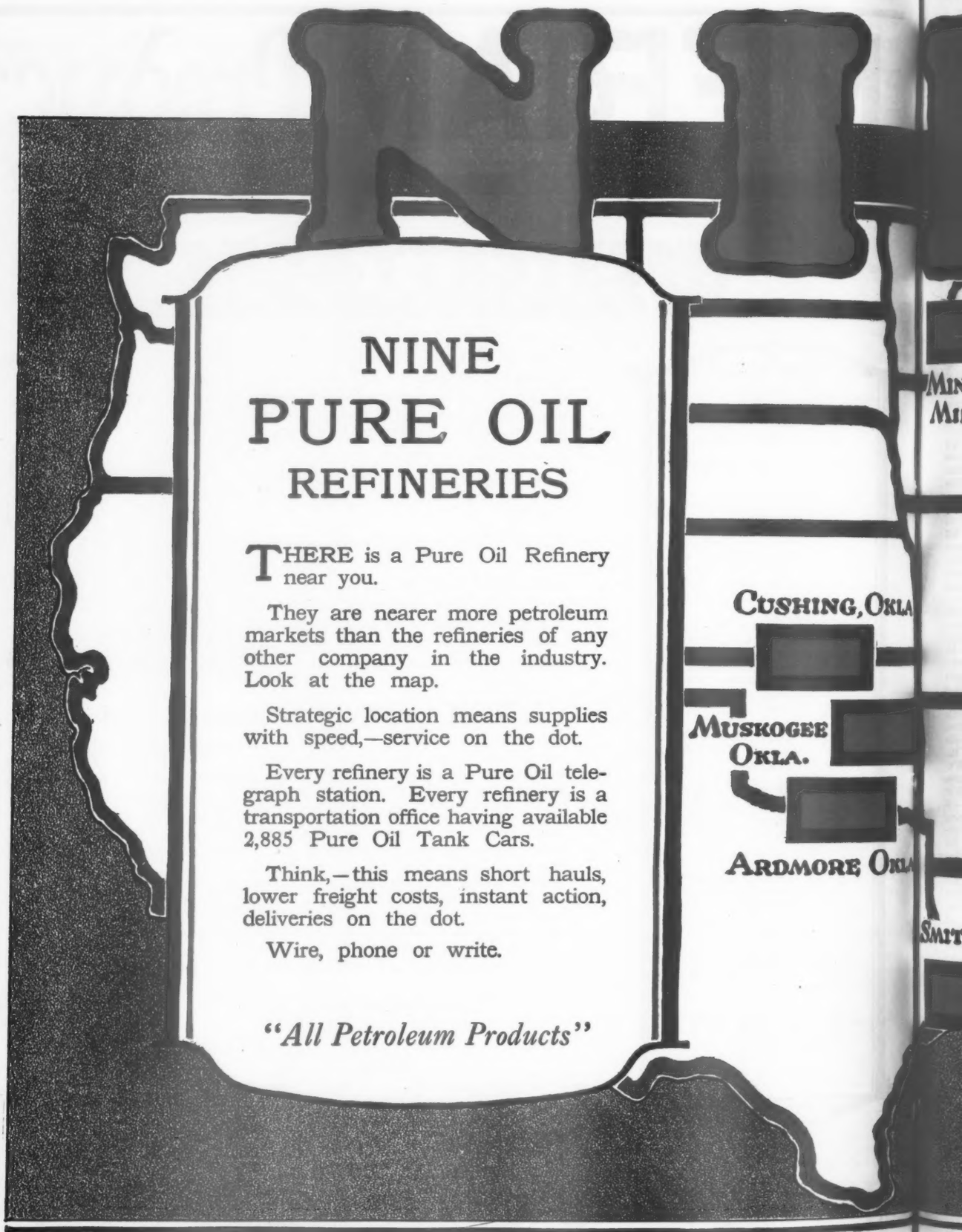
Meriam Draft Gauge

Readings are easily taken. Glass tube, one straight piece; not easily broken; replaced quickly and at small cost. Adjusting mounting bracket. Zero point quickly reached. Air space behind mounting bracket.



Meriam Made Manometers

The Meriam Manometer Line is accepted as standard of the "U" type pressure or vacuum gauges. Three scale boards stocked and furnished as ordered: (1) Inches and tenths, using water; (2) pounds and ounces, using mercury; (3) ounces and fractions, using water.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REFINERIES
THERE is a Pure Oil Refinery near you.
They are nearer more petroleum markets than the refineries of any other company in the industry. Look at the map.
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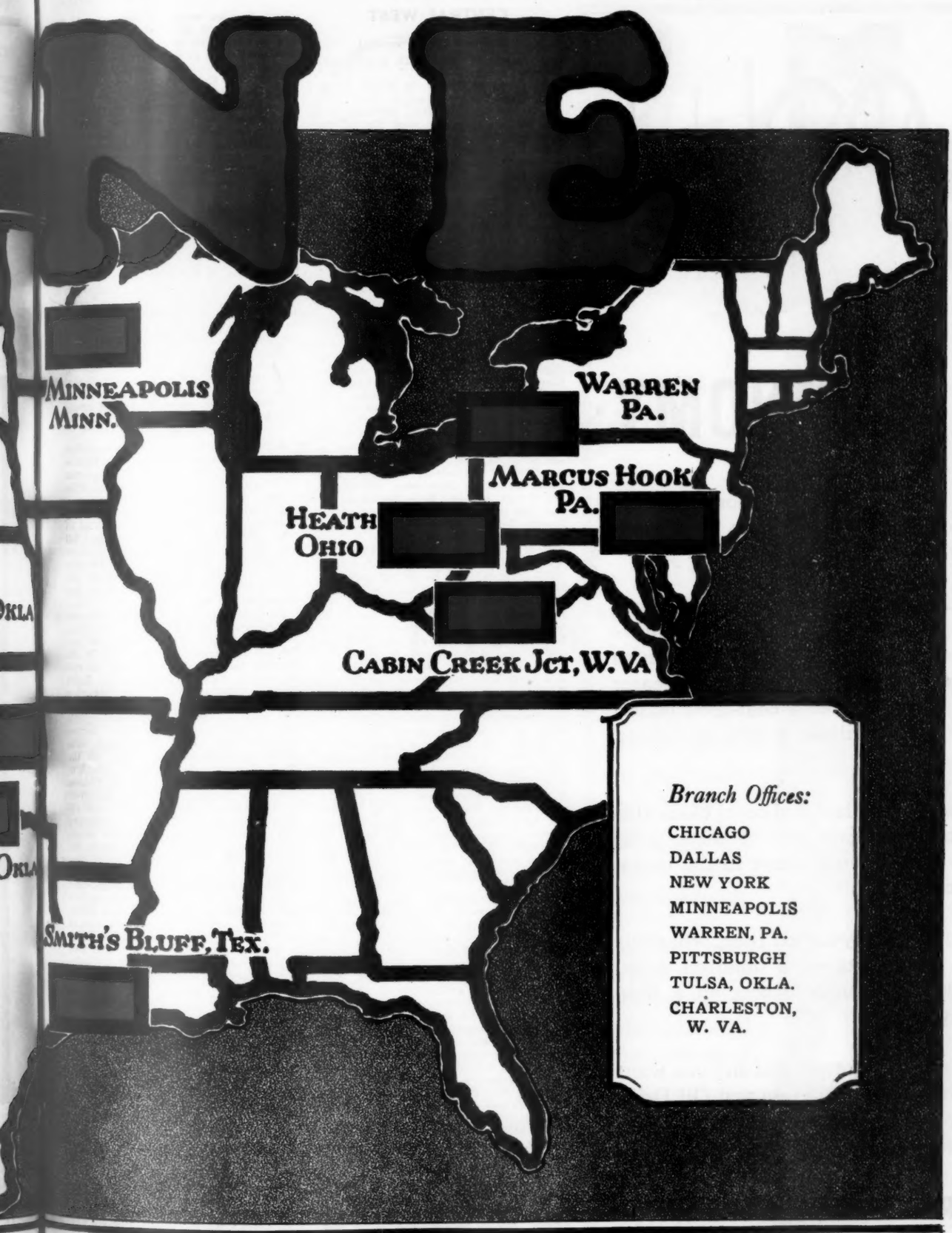
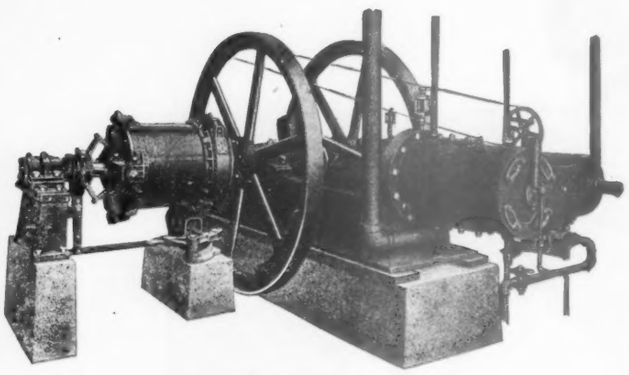


OIL COMPANY

COLUMBUS, OHIO



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Getting down to a dollars and cents basis, this saving, just on the first two or three wells drilled, will more than amount to the initial cost of the engine.

You can estimate for yourself then, what this saving will amount to on a hundred wells. There is very little upkeep cost on a Reid Drilling Engine.

If these statements interest you and you want more information on Reid Gas and Oil Drilling Engines, write for our Bulletin No. 28. We will be glad to send it to you.

JOSEPH REID GAS ENGINE COMPANY

OIL CITY, PENNSYLVANIA, U. S. A.

BRANCHES AND AGENCIES—Marietta, Ohio; Logan, Ohio; Newark, Ohio; Ft. Recovery, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Bradford Supply Co., Robinson, Ill.; Frick & Lindsay Co., Bradford, Pa., and Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Cal.; Frick-Reid Supply Company, Tulsa, Oklahoma, and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming.

BRANCH SHOP—TULSA, OKLAHOMA

CENTRAL WEST

(Continued from Page 54)

east quarter of Section 28, pumped one bbl. first head.

Southeast of Cygnet, in Bloom Township, Wood County, Clark A. Browning's No. 20 well, 400 feet from the north line and 50 feet from the west line of the Browning farm, Section 29, proved a dry hole at 1,260 feet, where salt water was encountered. In Section 8, in the northwest quarter of the section, the Ohio Oil Co.'s No. 26, located 1,180 feet from the north line and 250 feet from the west line of the S. B. Newcomer farm, pumped 30 bbls. from a depth of 1,460 feet or over 200 feet in the Trenton. In Lake Township, same county, Charles F. Zeising and others' No. 7 well, 400 feet from the south line and 200 feet from the east line of the Emil Brendt farm, Section 36, pumped 3 bbls. from a depth of 1,317 feet.

W. B. Jack and others drilled a test well in the northeast corner of the Mary Place farm, in the northwest quarter of Section 27, Logan Township, Auglaize County, 3 miles north and 1 mile west of Buckland, and found a dry hole. This is some distance to the north of the old Buckland Field.

In Gibson Township, Mercer County, 4 miles east and the same distance to the south of Fort Recovery and a mile southwest of Sharpsburg, known as Violte Postoffice, E. G. Henderson and others' No. 4 well, 800 feet from the south line and 200 feet from the east line of the Joseph Schmitz farm, in the southeast quarter of Section 36, pumped 5 bbls. Top of the Trenton found at 1,209 feet and drilled 43 feet in to a total depth of 1,252 feet. On the adjoining farm, the Central West Oil & Gas Co.'s No. 6 well, 750 feet from the south line and 800 feet from the west line of the P. J. Schmitz farm, same section, pumped 4 bbls. Top of sand found at 1,203 feet and drilled 36 feet in.

In the northwest quarter of Section 9, Liberty Township, Mercer County, and 3 miles north of Scudder Postoffice, the Celina Petroleum Co.'s No. 10 well, 300 feet from the north line and 300 feet from the south line of the M. Lynn, mapped as the Phil Lynn farm, is credited with a production of 30 bbls. first 24 hours. This is north a couple of miles from the same company's production on the Brehm farm.

In the northwest quarter of Section 15, York Township, Van Wert County, a short distance north of the hamlet of Jonestown, the Lima Trust Co.'s No. 7, in the southeast corner of the T. R. Hughes farm, pumped 20 bbls. at 1,235 feet.

A dozen or so miles east of Toledo on the south shore of Lake Erie, in the southwest quarter of Section 33, Jerusalem Township, Lucas County, the Ohio Oil Co.'s No. 12 well, 1,320 feet from the south line and 1,820 feet from the west line of the R. H. and M. A. Eck farm, showed a production of 18 bbls. flush and considered an excellent well for that area of the field which was supposed to be thoroughly drilled over. This well may bring about some additional development work along the south shore of the lake and Maumee Bay, whch has practically had no new work for a number of years. Top of sand was found at 1,337 feet and drilled 55 feet in the sand to a total depth of 1,392 feet.

In Mississinewa Township, Darke County, H. A. Marlin's No. 5 well, 800 feet from the south. line and 750 feet from the west line of the Jacob Schoen farm, in the northwest quarter of Section 2, proved a duster and was a surprise to the public at large as well as the owner. Top of sand found at 1,200 feet and drilled 41 feet in to a salt water vein.

A 5-bbl. pumper was drilled by E. A. Kuhns and others on the C. C. Ricketts farm, Section 1, Hopewell Township, Mercer County. Mack P. Colt, former vice president of the National Supply Co., with headquarters at Lima, with his associates Stelzer & McClure, are drilling a wildcat well on the William Miller farm, in the northeast quarter of Section 4, Center Township, Mercer County, and about 2 miles south of Mendon and 3 miles northwest of Neptune. It would not be surprising to see something new developed there as Colt is a regular rock hound and usually hits something worth while. Mr. Colt has disposed of some large properties during the past year or so, but cannot keep out of the game long enough to take a needed vacation after more than 30 years in the supply and producing end of the industry.

The outcome of the test under way by D. A. Miller on the J. W. Monroe farm Section 33, Jefferson Township, Mercer County, about 3 miles west and 1 mile north of Celina, will be watched with much interest, being in a virgin territory. Jefferson Township is directly north of Butler Township, where the Coldwater gas field is located, the gas being found in what is supposed to be the Niagara limestone at a depth of approximately 700 feet. These gas wells come in for from 1,000,000 to 3,000,000 feet, but drop off very rapidly. Butler Township is where the Lima people as well as Celina and St. Marys expected to get a bountiful supply of gas for their towns, but the numerous wells that have been drilled failed to come up to expectations and other sources of supply will have to be sought.

Indiana

A wildcat well has just been drilled on the southwest corner of the Charles Rumble farm, in the southwest quarter of Section 13, Logan Township, Pike County, 2 miles east and a little over a mile north of the town of Oatesville, in Indiana. The well showed a flush of 15 bbls. Top of sand was found at 1,303 feet and drilled 22 feet in to a total depth of 1,325 feet. This well extends the producing area for some little distance and may bring about further work in that immediate vicinity.

Another important test for southwestern Indiana is that made by Walter Sargent, 450 feet from the north line and 700 feet from the west line of the W. M. Steckler farm, in the southwest quarter of Section 25, Decker Township, Knox County, which proved a dry hole at a depth of 1,585 feet. This well is on the south side of the Wabash River, a little over 2 miles east of the town of Patton and 1½ miles south of the good wells of Hartman, Parrott & Young on the W. F. Courter farm, in Section 23, Wabash Township, Wabash County, Illinois. This test, though just across the river on the Indiana side, was made with expectations of extending the producing area of the Wabash County, or Allendale, Field of Illinois. Just across the river on the Illinois side a well was drilled on the Lovilean Chapman farm, in Section 25, Wabash Township, that made a fairly nice showing and the fact that the Steckler test came in a duster is quite a surprise. The south side of the river may be of a spotted nature as is that on the Illinois side. One well may prove a producer and four dry holes will be found surrounding the failure.

Illinois

H. McCurdy and others have drilled in their second test well near Charleston. The last venture is 125 feet from the north line and 400 feet from the west line of the J. J. Courtney farm, in the northwest quarter of the northwest quarter of Section 4, Ashmore Township, Coles County, and approximately 5 miles. The well was drilled to a total depth of 580 feet and given up as a failure. This is supposed shallow territory being north and west of the Westfield Field, that developed so many nice shallow wells along from 1,906 to 1,912 feet. The well is 6 miles to the northwest of the Parker Township development of Clark County which extends over into Hutton Township, Coles County. Other locations will be made by this firm as they expect to drill at least 10 tests on a very extensive acreage and figure if they make two strikes out of 10 they will be successful.

In Parker Township, Clark County, Lusk & Stratton's second well near the northwest corner of the G. L. Wiser farm, in the southwest quarter of the southwest quarter of Section 15, pumped 20 bbls. from the shallow sand at 405 feet.

In Bridgeport Township, Lawrence County, the Ohio Oil Co.'s No. 39 well,

What's become of the "Chain Basket"?

Some of the old oil field men can still remember the "chain basket." It was once a prominent part of many a drilling rig. Three or four times a day the "chain basket" was used to gather up the links of the old detachable chains that flew in all directions every time a chain broke.

The "chain basket" passed into history when Rex, the Genuine Chabelco, came into the oil fields.

Rex, the Genuine Chabelco, wears out instead of breaking up. It does not stretch, but runs true over the sprockets month after month. Rex Chabelco has constantly met the demand for stronger chain that came with bigger diameter bores, deeper wells and more rapid drilling.

As fast as a better chain was needed, a better Rex Chabelco has been ready for the oil fields.

That is why every oil field man who has carried the "chain basket" swears by Rex, the Genuine Chabelco, the oil well chain that wears out instead of going to pieces.

Rex, Genuine Chabelco, fits standard sprockets and holds its pitch. It does not stretch.

At left: strand of **REX** *genuine* **Chabelco 1030.**

Rex Safety Set Collar made of Certified Malleable Iron. Though stronger and more durable, it weighs only about half as much as a cast iron collar. Typical of the complete Rex transmission line.

Rex Temperim Sprocket Wheels have teeth and rim hardened to provide a harder surface of a tougher and more durable nature than the ordinary grey iron wheel.

The Chain Belt No. 210 Catalog and Engineering Data Book shown above consists of 512 pages. It lists in detail all information for the ordering and use of Rex Chain, Conveyors and Transmission Machinery.

GET GENUINE **REX** 1030 AND 1240

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HEAT INSULATION

The most efficient commercial barrier to heat waste. Outlasts the equipment in which it is used

Covering a still with Sil-O-Cel standard brick. When finished with Sil-O-Cel plastic cement, this insulation forms a uniform unbroken covering, free from joints or gaps.

Sil-O-Cel insulating materials provide for the economical insulation of any heated equipment. They can be used even where temperatures run as high as 2000 degrees. And their reasonable cost, compared on the basis of heat-retaining value, makes them altogether practical for covering retorts, stills and boilers which operate at much lower temperatures.

The insulating value of Sil-O-Cel cannot be destroyed under ordinary service. Sil-O-Cel is just as good after it has been in place for years, as the day it is installed.

Sil-O-Cel brick do not spall or lose their strength when properly installed behind refractory walls. They will not shrink. Made true to fire brick size and shape, they fit accurately in fire brick construction.

The approved methods of insulating refinery and nautral gasoline plant equipment are described in a 64-page book published by this company. A copy will be mailed free of charge to any engineer who writes for it on his business letterhead.

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IT PAYS TO INSULATE WITH
SIL-O-CEL
BRICK
BLOCK
POWDER
C-3 CONCRETE
A CELITE PRODUCT

25 feet from the north line and 1,320 feet from the east line of the W. C. Miller farm, Section 20, pumped 10 bbls. from the Bridgeport or Buchanan sand at 1,349 feet. This company pulled out and abandoned old No. 5 on the same farm. In the same township, the International Oil & Gas Co. and Murphy abandoned No. 7 C. H. Fyffe farm, Section 36.

The Allendale Field, in Wabash Township, Wabash County, was the hardest hit last week by the bringing in of three dry holes which were ideal locations for good wells. Peck & Hughes' No. 1 on the northeast corner of the R. Higgins farm, in the southwest quarter of Section 23, only a short distance northwest of the good wells of Hartman, Parrott & Young on the W. F. Courter farm, was a duster at 1,500 feet. Weidner, Smith & Craig also found a duster at No. 3 well, 2,500 feet from the south line and 2,600 feet from the west line of the Holson-Dorney farm, in the southwest quarter of Section 18, and about 1½ miles southeast of Allendale. Whiteside and others met with the same kind of luck at No. 2 well, 750 feet from the north line and 225 feet from the west line of the C. E. Courter farm of 80 acres, being the west half of the southwest quarter of Section 24, and only a location south and less than 500 feet east of the big well in the northeast corner of the W. F. Courter farm.

Wabash Township has certainly proved a spotted area to develop, but when a well is found, it is usually above the average production.

Central Ohio Field

Central Ohio gas area is showing less activity from day to day, although there are a dozen wells due for completion. Quite a number of wells are shut down, some near the deep Clinton and others only a few hundred feet. The well of William Dennis and others on the southeast corner of the H. Rocke farm, Lot 24, Cannan Township, Wayne County, showed for 1,250 feet of gas at 3,300 feet.

In Richland Township, Holmes County, the East Ohio Gas Co. drilled a dry hole at No. 1 John J. Patterson farm, Lot 5. This company drilled a duster on the J. Clark Smith farm, Lot 8, Hardy Township, same county.

KENTUCKY-TENNESSEE

(Continued from Page 54)

Co. The territory on which the Marcum was drilled is a part of a tract of 4,500 acres on which 23 gas wells estimated at better than 1,000,000 feet each have been drilled. On the C. Gourley farm, the Petroleum Exploration's No. 3 was dry at 1,175 feet. It was drilled 500 feet east of No. 1 Smallhouse. The same company's No. 1 Mart Abston, 2 miles above Idamay, was dry at 1,240 feet.

Other Completions

In Johnson-Magoffin Counties, the Mid-South Petroleum Co.'s Nos. 5 and 6 Howard made 4 and 7 bbls. respectively from the Weir sand. The Burning Fork Syndicate's No. 1 H. Patrick, 10 bbls. from the Weir sand; Holbrook and others' wildcat on the Allen farm, on Half Mountain Creek, is estimated good for 1,000,000 feet of gas.

In the North Weir Field of Lawrence and Johnson Counties, the Union Gas & Oil Co.'s No. 7 W. D. Lester, District No. 22, is good for 80 bbls. from the Weir sand. No. 31 P. P. Holbrook, District No. 5, made 50 bbls. flush from the Weir sand.

In Estill County, the Clark Oil Co.'s No. 2 Smith made 4 bbls. when put on the jack at 350 feet.

Western Division

Drilling operations in the western division of Kentucky have fallen off quite a bit the past two weeks, especially in Barren County, and no resumption of work is looked for until the operators are satisfied with market conditions. The recent cut in Pennsylvania and Ohio has taken the backbone out of the Kentucky producers, who are of the opinion that when those States get a cut, Kentucky is sure to follow.

Warren County

George McGinley got the best well of the week in Warren County in his No. 5 on the Wilson tract, in the Davenport Pool. It made 49 bbls. the first pumping from a total depth of 1,153 feet, 90 feet under the black shale. No. 4, brought in several weeks ago, made 55 bbls. flush. This lease was bought by McGinley for junk and his hunch to drill several other wells proved lucky. On the C. A. Keller farm, in the same vicinity, the Westland Oil Corp.'s No. 27 C. A. Keller pumped 5 bbls. at 1,050 feet, approximately 90 feet below the shale.

A wildcat drilled by the Evans Oil Co. on the Montague farm, near Richardsville, was dry and abandoned at 564 feet.

Amfot Oil Corp.'s No. 9 Shanks, east of No. 8, started off at 10 bbls. at 1,118 feet. Shale was from 956 to 1,036 feet. Two sands were found, the first from 1,046 to 1,050 feet, which was shot with 20 quarts, and the second from 1,102 to 1,117 feet, which was charged with 60 quarts. On the Bryant farm, Cunningham & Henry's No. 8, offsetting the Gillespie tracts, is a 15-bbl. pumper at 1,140 feet, approximately 88 feet below the shale.

In the Richmond shallow pool, south of Bowling Green, Bolling & Loman's No. 1 Stanley showed for 5 bbls. after a shot at 424 feet.

In eastern Warren, the Takay Oil Co.'s No. 14 Bronson pumped 3 bbls. at 500 feet.

Barren County

From now on work in Barren County will diminish unless a new pool is opened, as the Hall-Baker area to the north of Glasgow is just about defined. The last well on the Baker lease found salt water in the pay sand, leaving but one good location left to drill. To the north, the Wood Oil Co. got a duster and to the northeast gas is being found. The only chance left is an extension to the southeast. So far 200 acres is all that is showing commercial production in the entire district. The Emery-Moore Pool is just about drilled up, only about 40 locations being left to drill.

The Star Oil Co. got its first dry hole out of 33 wells the past week when its test about one-half mile north of production came in dry in both the shallow and deep pays.

In the Emery-Moore Pool, the Henderson Oil Co.'s No. 6 Burris made 3 bbls. at 546 feet, 180 feet below the shale, where it was treated with a 30-quart shot; Stafford, Scott and others' No. 2 Lewis was dry in the deep pay.

In the Hall-Baker Pool, the Wood Oil Co. finished Nos. 5 and 6 on the W. M. Church 63 acres, good for 12 bbls. each at 515 and 518 feet, respectively. The No. 3 Evans of Harrington & Norris pumped 16 bbls. from the deep pay at 180 feet below the shale. Messenger, Gumm & Pritchard's No. 1 C. Bradford is making 3 bbls. of amber oil at 175 feet.

Two tests drilled by Lewis J. Emery, Jr., & Sons in the vicinity of Glasgow Junction were both dry and abandoned. They were No. 1 C. W. Bellamy and No. 1 on the Cox. This concern's No. 1 John Wells was plugged at about 500 feet.

Other Completions

In Allen County, Lee Moore's No. 4 Lee Moore, 6 bbls. at 362 feet; H. Grey's No. 1 R. R. Williams, 2 bbls. at 245 feet; unknown parties' No. 2 T. Hinton, 6 bbls. at 347 feet; White Plains Oil & Gas Co.'s No. 9 J. R. Hornbuckle, 7 bbls. at 400 feet.

In the Owensboro District, C. E. Daugherty's No. 3 Widow Crowe is making 2 bbls. from the Jett sand; Pennsylvania-Indiana Oil Syndicate's No. 1 J. H. Phillips, 5 bbls. from the Barlow sand and C. A. Leeper's No. 2 Beauchamp was dry in both the Jett and stray sands.

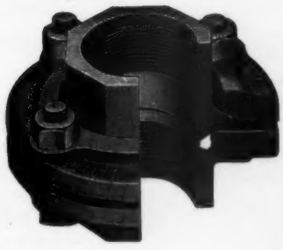
In Simpson County, Small & Sully's No. 8 Hogan, near Pilot Knob, was estimated at 10 bbls. at 592 feet.

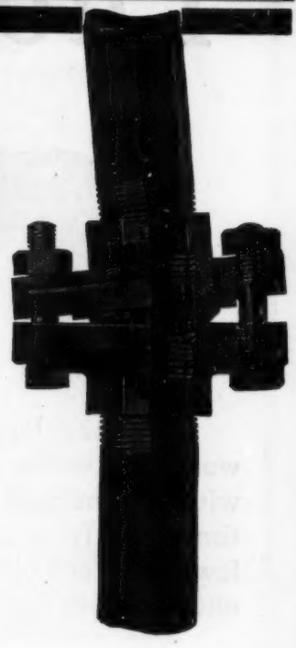
SEES TURN FOR BETTER

CHICAGO, April 11.—Conditions in the oil industry are expected to make a decided turn for the better before the end of April, according to David M. Copeland, first vice president of the General American Tank Car Corp. Mr. Copeland has just returned from an extensive survey of the oil fields in both the East and West.

Jefferson

3-Part Flange
EASY TO APPLY





The JEFFERSON 3-part Flange, Style B, is exceptionally easy to apply.

With the ordinary 2-part flange it is necessary to use considerable force to bring the bolt holes opposite each other; and such force sometimes breaks the flange or ruptures the pipe end. In addition, time is wasted.

With the JEFFERSON 3-part flange these disadvantages are eliminated. Bolt holes are brought opposite each other by simply swivelling the loose collar.

Another advantage is the accurate adjustment permitted by this flange when pipe is slightly out of alignment, as illustrated at right.

JEFFERSON Unions, two-part and three-part Flanges represent the highest values that can be obtained in fittings of their type. They are made of high grade air-refined malleable iron and have ground-ball brass-to-iron joints which cannot corrode. Brass seat rings are located away from runways of fittings where they will not be exposed to injury. This feature is patented.

2-Part Flange
Style D for 500 lbs.
Style E for 1,000 lbs.

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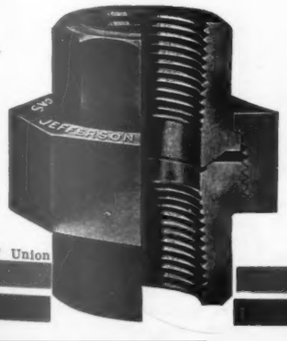
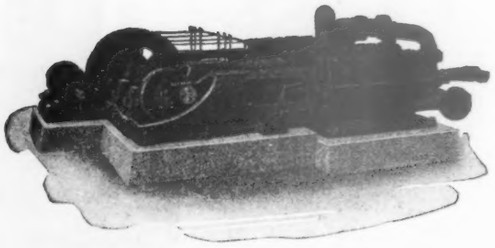
MORE THAN 70 STORES IN THE OIL COUNTRY



Style "A" Union

CONTINENTAL

Thoughts



We see a large triplex pipe line pump working steadily and easily—almost lazily—with but one man in evidence only part of the time. He feels a few bearings, looks into a few sight-feed oilers, and goes out seemingly unconcerned.

We are awed by the very silence of so much power.

Through the firewall, we hear the dull muffled exhaust of the oil engine and we remember the impressive fact that a modern oil engine pumping outfit will use only about a barrel of fuel oil in pumping 2300 barrels through high pressure systems.

And then our mind takes us back to the pioneer oil days in Pennsylvania of sweating horses, swearing teamsters—all laboring through the mud—to deliver five barrels of crude oil to a refinery but five miles away.

By wagon transportation then it cost $1.00 a barrel *for one mile*, while the rate now by pipe lines, even with the low valuation of the dollar, is $1.00 a barrel *for about 1700 miles.*

Low cost transportation by pipe lines was the salvation of the oil industry, and this company is proud of its work in developing and furnishing special pumps and equipment for such an essential part of the industry.

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

District Offices: New York Philadelphia Pittsburgh Cleveland Tulsa Houston Denver

RESTRICTION OF CRUDE PRODUCTION WOULD HAVE DENIED PRESENT USES

By L. M. Fanning

It is worthy of note that many of the proposals raised by a consideration of petroleum conservation hinge in their successful application on cooperative, if not completely integrated, operation. As against any such condition, the oil industry today stands in all its branches as the most competitive of all American enterprises.

Recognition of present petroleum problems must include due appreciation of the revolutionary changes that have occurred in the industry during the last 15 or 16 years. Petroleum has been developed in this country under private enterprise. The oil business is like any other business, standing or falling on its ability to procure the raw material and to dispose of the raw and finished products at enough profit to insure the continuity and expansion of the enterprise. Its functioning involves primarily the attraction of capital.

There have been few periods since the industry's birth in 1859 when the pressure of multiplying demand for oil has not been the main impulse driving the process of the business' development. To understand the present financial structure and the operating methods in vogue, it is necessary to review in part what has happened in the way of the world's increasing demand for petroleum products.

In 1909 the petroleum industry was called upon chiefly to supply a demand for keronsene for light and heat in lamps and stoves. The total production of crude oil that year was 128,329,000 bbls. There were 147 refineries, which in 1909 made 14,000,000 bbls. of gasoline, then practically a waste product; 46,000,000 bbls. of kerosene, 40,000,000 bbls. of gas and fuel oil and 13,000,000 bbls. of lubricating oils.

Development of Uses

In those days the principal use for fuel oil was in the Pacific Coast district where coal was prohibitive in price and where the development of oil production in California made oil, particularly as the petroleum was of a heavy grade, best adapted for fuel, a logical and popular substitute for coal on railroads, in intries, in buildings and in homes. In 1909 railroads, chiefly southwestern lines, consumed 19,905,000 bbls. of fuel oil. Public utility power plants consumed considerably less than 10,000,000 bbls., and manufacturers of gas consumed a very small quantity of gas oil compared with their present use. The market for lubricating oils was largely industrial and rail transportation.

Mainly the petroleum industry existed on its ability to supply the demand for kerosene, which became of secondary importance as a source of light and heat with the development of artificial gas and of electricity. Had these latter agencies failed to develop, the immediately preceding and succeeding years may have seen as great an industrial growth around the product, kerosene, as was destined to be seen around the then surplus product, gasoline.

The automobile completely revolutionized the oil industry. In 1909 there were 311,000 automobiles registered in this country, providing an uncertain market for gasoline and one which had a dubious future as looked upon at that time. It is only necessary to point out that today there are over 17,000,000 motor cars requiring gasoline fuel, to convey the tremendous proportions of the change to which the petroleum industry has been forced to adapt itself.

It may also be well to compare briefly statistics for 1924 with the few that have been given for 1909. In 1924 the production of crude oil in this country was 720,000,000 bbls. and 78,000,000 bbls. were imported into the United States, as against 128,329,000 bbls. produced and an insignificant quantity imported in 1909 There were 357 refineries with a daily crude oil capacity of 2,480,922 bbls. operating at the end of last year, against the 147 refineries with a daily capacity of probably less than 500,000 bbls. in 1909. The output of products by refineries in 1924 compared with 1909 as follows:

	1924 Barrels	1909 Barrels
Gasoline	313,000,000	14,000,000
Kerosene	60,000,000	46,000,000
Gas and fieul oil..	320,000,000	40,000,000
Lubricating oils ..	28,000,000	13,000,000

Expanding the Supply

These comparative figures reveal in part what the petroleum industry has been forced to do in the way of expanding its production facilities so that demand for petroleum products could be met. Crude production had to be stimulated. Drilling operations were greatly increased, and the expense of finding new production increased as it became necessary to drill deeper to find the oil. As in the case of producing and refining facilities, transportation and distribution facilities had to be multiplied There was a corresponding growth in pipe lines, in tankage, in tank steamers and in marketing equipment during the last decade and a half

It is of interest that the marketing of gasoline entailed the performance of an entirely new kind of service on the part of the industry The filling station was practically unknown in 1909. Now there are over 75,000 in this country without taking into consideration the thousands of curb pumps, and they symbolize one feature of investment obligation required of the industry to meet the demand for gasoline and to render the service expected by the public.

The annual consumption of gasoline in this country by automobiles, tractors, motor boats, airships, in the cleaning and paint industries, amounts to 185,000,000 bbls., a jump of tremendous industrial significance in the light of the same product being in little or no demand sixteen years ago. The automobile has also meant greatly increased requirements for lubricating oils.

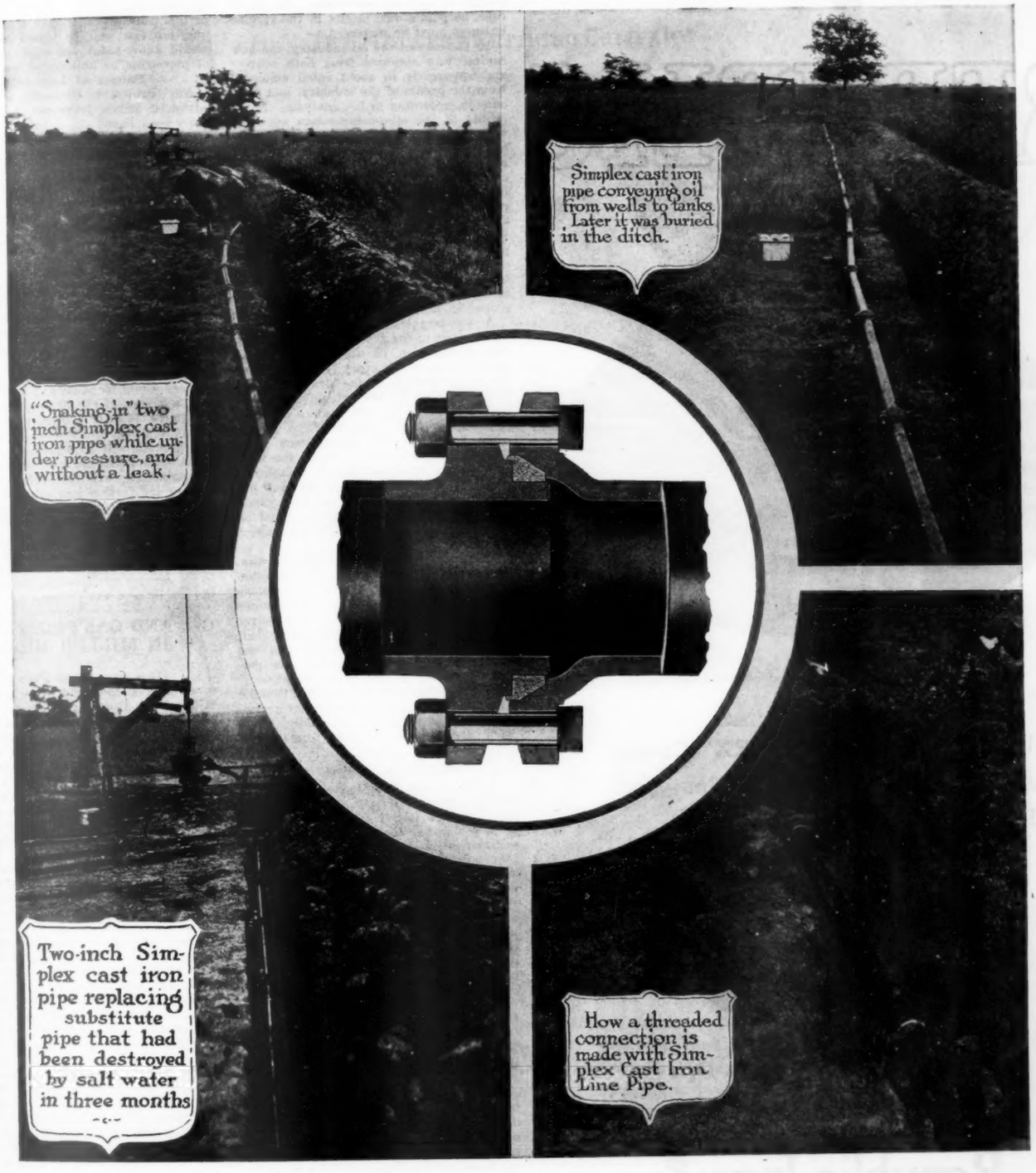
The revolution surrounding the use of gasoline has been accompanied by a change only slightly less momentous pertaining to fuel oil. Utilization or fuel oil for heat and energy is no longer confined to the Pacific Coast. Use of fuel oil by the navies of the Great Powers began about a decade ago. The war made the conversion from coal almost complete, and further, it brought about the use of oil by fast passenger and cargo vessels. Now the merchant fleets of the world are definitely committed to the use of oil as against coal. Fuel oil is in fairly general use under boilers in industrial plants, largely as a result of the availability of large quantities of low grade foreign oil. A new and growing use is the household burner. At present the annual consumption of gas and fuel oil is about as follows:

	Barrels
By railroads	63,000,000
By merchant vessels	55,000,000
By U. S. Navy	6,000,000
By electric plants	17,000,000
By gas manufacturers	23,000,000
By industries and homes	128,000,000

Vast Sums Needed

The tremendously increased consumption of petroleum products which has been outlined required in their being met by the petroleum industry vast sums of money for investment in facilities. In 1909 the approximate investment in oil—in production, refineries, pipe lines, tank cars, tank steamers and marketing equipment—was $800,000,000. Today it is close to $9,000,000,000 divided approximately as follows: Production, $4,500,000,000;; refineries, $2,300,000,000; pipe lines, $700,000,000; tank cars, $270,000,000; marketing equipment, $800,000,000, and tank steamers, $430,000,000.

One of the country's leading bankers has explained with great clarity how such an amount of capital was obtained. In every line of business, he states, when a smilar situation exists this question is answered through rising prices for the product and through increasing profits. There is no other way of attracting capital. If the public wants a greater production, the capital for that production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must be provided either from profits of the industry or by attracting it from profits or savings elsewhere. In either case, he points out, profits in the specific business must be increased.

In the case of the oil industry, the new capital was obtained from both sources and apparently in about equal amounts, from the profits of the industry, and from outside, according to his analysis. If the profits of the oil business has not been what they were, the increased production could not have been had without raising more capital outside, and, of course, it was profits made within the industry that made it possible to raise capital from outside. "Critics may analyze the situation to their hearts' content," he states, "They show no other practical way by which the industry could have met the increasing demand for its product. It was simply another instance of the natural working of the economic law."

A remarkable feature of this situation is that in the face of rapidly increasing consumption of oil since 1913, oil products have in every year averaged lower in relation to the prices of 1913 than the group of 404 principal commodities included in the price tables compiled by the Bureau of Labor. The banker concludes that "that record was made possible only by the profits of the business which were inteligently employed, not only in increasing production, but in method and character of refinement. The industry can well take its stand on the net result to the public in that period of enormous expansion."

To put his remarks in a different way, the record of these years of expansion is not merely one of a greater barrelage but of improvements which have made the barrels of oil found go a much longer way than they did a decade and a half ago. Therefore, the industry has not merely found enough oil, but has performed a notable feat of conservation.

It is important to bear this fact in mind when considering prescriptions for accomplishing conservation, especially when such prescriptions involve fundamental changes in the industry.

Increase in Competition

Reference has been made to the competitive character of the petroleum industry. From a purely physical standpoint it is recognized that the industry would function with maximum efficiency as a monopoly. However, the tendency toward integration was stopped by the courts. The Standard Oil Co. was dissolved in 1911 and split into over 30 units. Complete economic separation was not ordered nor accomplished, and these companies did not overnight become competing units, invading each other's field or territory. In fact, many operated in restricted departments of territories and were not actually or potentially competitive.

The preservation and growth of the larger units are more and more forcing these companies each year into increased competition. What is of even greater significance is that the expansion of the industry has seen a tremendous increase of the independent oil business. Not so many years ago the refineries of the country were concentrated in large degree in the hands of the Standard Oil companies. Today the companies comprising the so-called Standard Oil group own probably less than 40 per cent of the total refining capacity and are producing probably only 45 per cent of the total output of refined products. The group probably produces not more than 30 per cent of all the crude oil brought to the surface.

It is generally recognized in the petroleum industry that there is over-competition in petroleum production, in refining and in marketing; but a review of the expansion of the business over the last decade and a half such as has been attempted indicates that this condition must be a consequence of the revolution that has occurred. It has been shown that the operation of economic law has been servicable to industrial and human progress even if it has left the oil industry with some difficult internal problems.

If restrictions of a fundamental nature, such as the hampering of the free operation of the industry as an industry, had been enforced back in 1909 when, incidentally, the conservation movement in this country got its great impteus, the question can well be raised whether we would know today the value of the uses of petroleum or how or where to find it.

Danger of Limitation

Any arbitrary conservation program advanced fifteen years would necessarily have been based on knowledge then existing pertaining to resources, methods of extraction and refinement, and utilization of petroleum. In 1909 the best geological opinion gave the estimated maximum petroleum reserves of the Mid-Continent area at 850,000,000 bbls. Since that time this territory has actually produced over 2,500,000,000 bbls., and is now yielding oil at the annual rate of 370,000,000 bbls.

If on the basis of this knowledge there had been an arbitrary restriction of petroleum production on the ground of conserving the estimated reserves for future use, as would have appeared justifiable, present-day uses of petroleum would be unknown and our knowledge of actual resources would be backward and incorrect.

The danger of the present conservation movement is that arbitrary steps based upon premises which may prove equally as unsound, will be taken and that such steps, disturbing the working of natural economic law, will retard logical growth of uses and further improvement in methods of oil finding and refinement. This is the more serious as $9,000,000,000 of capital investment—the welfare of a great industry—is involved, affecting in its financial relationship, but principally in its service relationship, the welfare of the public and the nation.

OIL AND GAS PROSPECTS IN MILLER HILL-LAKE

(Continued from Page 62)

sands that might yield oil or gas in the Miller Hill Dome, the higher horisons that might be productive having been removed by erosion. These formations have not produced oil in this part of Wyoming, and the oil found in them near Lander, Thermopolis, Casper, and elsewhere is heavy and dark. The Chugwater (?) and Embar(?) formations are not promising reservoirs for oil and gas as exposed near Bell Spring, 10 miles north of Rawlins. At this place the Tensleep sandstone is apparently a suitable reservoir rock, but in the Miller Hill Dome its degree of cementation is not known and even its presence there is uncertain.

The Funk well, on Muddy Creek, near the east quarter corner of Section 3-17n-89w, reached a depth of 1,200 feet and is reported to have found showings of oil at 720 and 1,074 feet in thin sandy members of the Chugwater (?). The deepest formation reached was probably the Embar (?) and certainly was not the Tensleep. Another attempt to find oil was made on Rock Falls Creek, probably in Section 25-18n-89w, but because of financial trouble drilling was discontinued in the first 100 feet. The possibility of finding oil in the dome can best be tested by one or more wells located near a line from Section 21-18n-88w to Section 3-17n-89w, and drilled deep enough to pass through the Tensleep sandstone.

Wells drilled on the Miller Hill Dome will be expensive because of the distance from the railroad at Rawlins and the difficult climb at the hill on the northeast end of the dome. The expense might be reduced somewhat by using coal from the mine in Section 4-17n-90w, for fuel. A sample of this coal has a heating value of 10,539 British thermal units. Supplies of water for drilling and domestic use are abundant in the region.

FLOODS HANDICAP PERU

TORONTO, Ont., April 11.—Recent floods in Peru have handicapped operations of International Petroleum Co. to some extent, a pumping station having been badly damaged. This will reflect on output for the next few months, though if crude prices continue to harden, opinion here is that enhanced price will make up for much of present loss.

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MEXICAN PRODUCTION OF CRUDE OIL IN 23 YEARS 1,243,043,619 BARRELS

By George Blardone

TAMPICO, Mexico, April 10.—The total volume of oil produced in Mexico since the first 10,000 bbls. was reported in 1901, to the end of 1924, can be placed, according to my records, at 1,243,043,619 bbls. Of this volume the South Fields, or light oil district, can be credited with 827,484,462 bbls.; the Northern Fields, or heavy oil district, with 413,304,657, while the Isthmus of Tehuantepec is reckoned to have produced 2,254,500 bbls.

The greatest productive strip in the republic to date is that strip running from Tepetate through upper and lower Chinampa into Amatlan and Zacamixtle, north a little east to south a little west. Knowing of a fault through about the middle of the Chinampa, it became the custom to divide the production into pools known as "Tepetate-Upper Chinampa," and "Lower Chinampa-Amatlan-Zacamixtle." This long narrow line, however, has produced to the end of last year 386,338,780 bbls.; and quite some oil from stripper wells continues to come from it. Divided, Tepetate-Upper Chinampa is credited with a production of 138,800,296 bbls., three-fourths of which, or more, came from Huasteca Petroleum Co.'s (Mexican Petroleum), No. 7 Juan Casiano, one of the world's wonder wells, and the first of the greater gushers to be finished in Mexico. It was completed in September, 1910.

Los Naranjos

Lower Chinampa-Amatlan-Zacamixtle had its first prominence when Mexican Eagle Oil Co., Ltd., completed No. 1 Los Naranjos, Lot 260 Amatlan, in 1913, but as its production was not needed until its No. 4 Potrero del Llano failed the morning of December 4, 1918, it was merely kept in reserve until that time, when drilling was resumed in this Los Naranjos group with magnificent results. In 1919, Tepetate commenced to show water; and with this saline invasion commencing hard on the heel of No. 4's sensational collapse down in Potero del Llano, the march south into Lower Chinampa commenced.

Again, when in the fall of 1919 failures became pronounced in Tepetate, Upper Chinampa, including No. 7 Juan Casiano itself, drilling was immediately intensified in the southern part of this sector, as well as in Lower Chinampa-Amatlan. The rest is easily recalled in the feverish drilling campaign of 1920 and 1921, when middle Amatlan suddenly was quickly invaded by salt water in the mid-summer of '21; and then, too, it was learned to many people's sorrow, that Zacamixtle, the south part of this great stretch, was, in the main, a delusion. The formation plunged there, and while a little oil was taken out of it from some wells, on the whole it was a bitter disappointment.

Toteco and Cerro Azul

Meanwhile, west of Zacamixtle lay Toteco, and directly south of it Cerro Azul, the main pool in the latter presumably faulted off from the first. Cerro Azul was a property owned entirely by the Doheny interests and prior to 1921 was more in the nature of a reserve for the interests in question for its wells were near the center of this big block and this precluded competitive line drilling. The sensational well of this group was No. 4, completed in February, 1916, and long closed in as its production during No. 7 Juan Casiano's, (and other wells belonging to the same company in Upper Chinampa), life time was not particularly required. This pool has produced 86,290,724 bbls. up to the first of the year, most of which came from No. 4, which continues in the production column.

Toteco's first well was drilled by International Petroleum Co. in February, 1921. Mexican Gulf Oil Co. followed with a good well; and from the sub-sea level depths of these two wells it was immediately recognized that another pool of first importance had been tapped. But here the remainder of the petroleum world were in the position of more or less envious sightseers. These two companies controlled Toteco. True, Huasteca Petroleum Co., by virtue of promptly drilling eight producers of worth in Cerro Azul as close to the Toteco line as possible, got no small volume of oil from the pool as well. These three companies aside, however, Toteco was a closed book to everybody else. Result: Toteco was in the spotlight until July 3, 1922, when salt water suddenly appeared all over the place. Since that time, however, it has stripped some 38,000,000 bbls. to the beginning of the present year, and continues stripping something a little less than 10,000 bbls. a day. Its production to the end of 1924 is 138,290,140 bbls.

Potrero del Llano

Back in 1910, when the heartening results at Juan Casiano, up in Chinampa, was cheering on the Doheny forces, (the petroleum world in those days apparently paid no particular attention to these remarkable strikes), Mexican Eagle Oil Co., Ltd., had drilled in two little wells in Potrero del Llano, and was drilling on three more. One of them made history. It was No. 4, and in it came the day after Christmas, 1910, a tremendous gusher, destined to run wild for 90 days. Just how much oil that well made will never be accurately known. In these figures I am crediting it with over 100,000,000 bbls., which might be considered what the well made that some account could be kept of. It failing date has already been noted in this review. The Potrero Pool, to which is joined Alazan, directly north of it, has made, say, 121,735,115 bbls.

Tierra Blanca-Chapopote Nunez

These two pools, lying just north of the Tuxpam River, are also owned by the Doheny interests, and with Cerro Azul, are the principal producing pools in the south fields at this time. Exploitation in these two pools dates from the later days of 1922. Tierra Blanca, apparently the most important of the two, lies directly west of Chapopote Nunez, the latter, in turn, being directly north of Penn Mex Fuel Co.'s Alamo Pool, which is just south of the Tuxpam River. Up to the end of the year Tierra Blanca and Chapopote Nunez had produced 38,693,772 bbls.

The Alamo

The Alamo Pool, referred to above, had its first producing well finished in 1913. Exploitation, however, did not commence until March, 1915, but from that time on it was fairly steady until, say, early 1923, when salt water began to make inroads on the Alamo proper, although extensions of this narrow structure to the southeast, (the Jardin), got it back again in late 1923; and its production during 1924 was considerably in excess of its 1923 figures. The pool had produced to the end of 1924, 42,587,107 bbls.

The other producing horizons of the South Fields were and are of minor importance. To balance the total credited to this light oil district consider: At the north, San Geronimo, where the oil is of a heavier gravity than was usual farther south, which produced 2,274,611 bbls.; just south of it Chiconcillo, 2,889,244; next in line south of it, San Miguel, with 283,727 bbls. These three constitute the northermost South Fields group of productive pools. Sandwiched in between Potrero del Llano and the Tierra Blanca further south is Cerro Viejo. This pool had produced to the end of last year 5,793,719 bbls., with its production curve well down in 1924. Minor pools were Tierra Amarillo and Tanjuijo, which have produced, say 647,727 bbls., and Molino, a freak well of heavy gravity oil not so far from the Tuxpam River, which did 279,355 bbls. These last three pools belong to the things that were.

Way south of the Tuxpam River was

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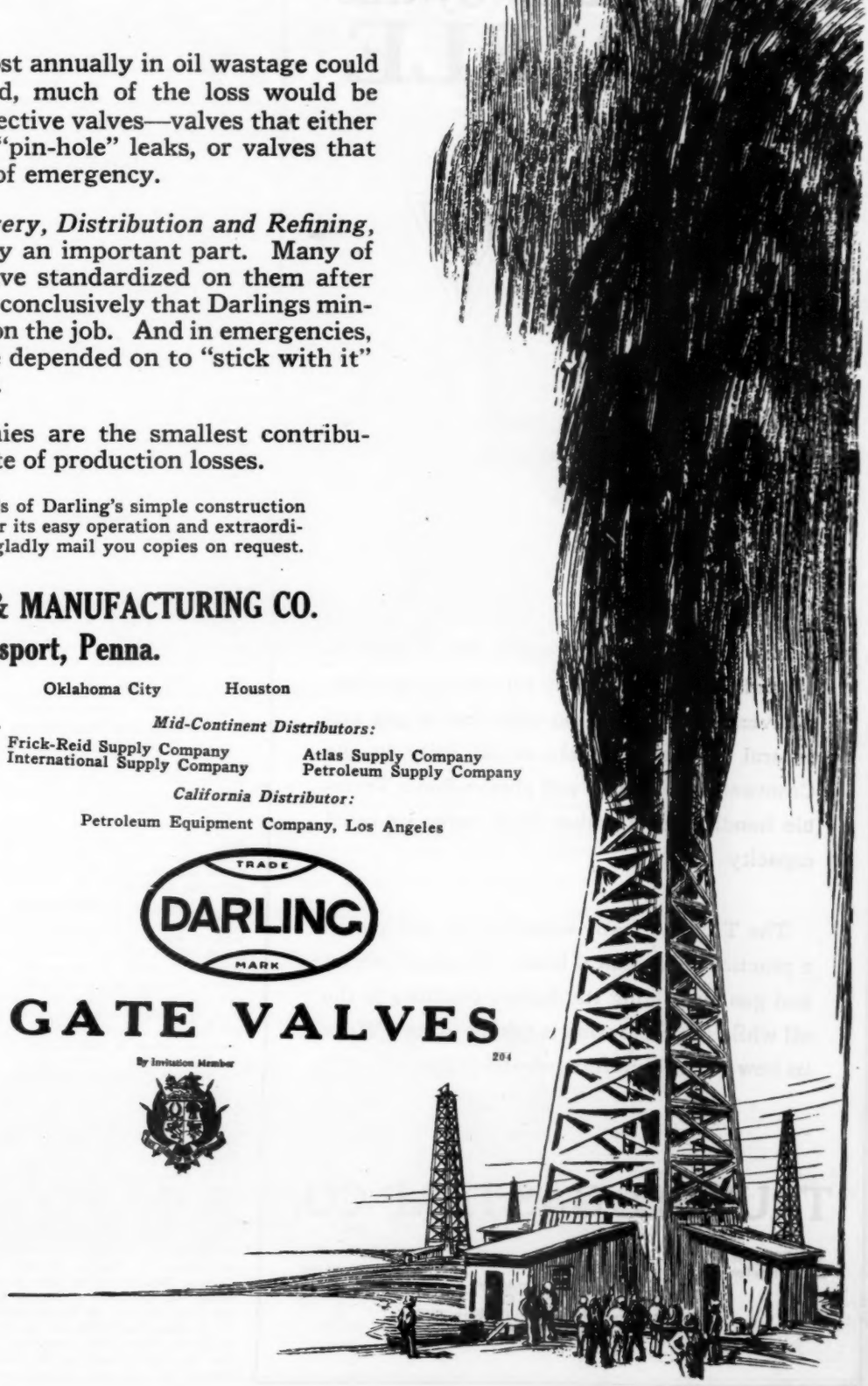

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the Furbero Pool, which, exploited many years ago by the Oil Fields of Mexico, a subsidiary of Mexican Eagle Oil Co., has done 1,380,441 bbls.

Northern Fields

As has been many times related the real petrolific history of Mexico, in its actual economic sense, commenced at Ebano, west of Tampico some 50 miles. Here the first gusher in the Republic, (No. 1 Pez), was drilled by the Doheny interests. It was a 1,500-bbl. well. Ebano production, until late last year, was always sold in the domestic market, and when revolutionary troubles disturbed this market its producing wells were pinched in more or less and drilling was entirely suspended for a number of years. Wherefore, its production figures are not a true index of what the pool might have produced under steady exploitation. Now, however, it is in full swing, its 1924 production the largest of any single year in its history. To the end of the period under discussion the pool had produced 35,543,824 bbls.

Panuco

Panuco's discovery well was not drilled until late 1910. It also was a small gusher, starting off around 1,000 bbls. Exploitation commenced in a desultory way from Panuco in 1912, but a real swing was not had until, say 1914. Its first great gusher of the major class was completed January 11, 1914, when La Corona Petroleum Co. brought in a well that tested later, say 50,000 bbls. A few days afterward the then Freeport & Mexican Fuel Oil Corp. drilled in its No. 3 Zurita, which was destined to prove the largest single producer. All of the several sectors that go to make up the general Panuco Field has thus far known. When its swan song was sung it had produced something over 22,000,000 bbls. if memory serves. The general Panuco Field can be credited with some 246,455,393 bbls. of production to the end of the past year.

Cacalilao

The Cacalilao sector of the Northern Fields is analogous to the Chinampa-Amatlan sector in the south fields. The first producer was not drilled there until 1922, and the full swing on it did not really take place until 1923, but from that time on it has been drilled and exploited to the limit, just as was the south fields sector remarked back in 1920-21. As a result it has produced in its comparatively short life 114,314,513 bbls., and is still a potent productive factor.

Topila and Miscellaneous

Topila is the only other northern field pool of much record. It started with much promise but did not live up to expectations. It had produced to the end of 1924, 16,379,909 bbls.

The El Barco is a new sector just west and a little south of the old Chila Pool. It has done 351,018 bbls.; and the other minor miscellaneous pools can be credited with 260,000 bbls.

Isthmus of Tehuantepec

The famous Isthmus of Tehuantepec, land of salt domes and light gravity oils, which miight be said to have started the Pearson interests in petroleum exploration in Mexico, is another field that did not live up to promise. To balance the total of production it is credited with 2,254,500 bbls., nearly all of which was produced prior to 1912.

EASTERN FIELDS

(Continued from Page 52)

a location on the John M. Summers farm. In Center district, Gilmer County, the Ohio Fuel Oil Co. has made the location for a second test on the William Wilmoth farm. In the same district, the Chartiers Oil Co. is due in the Maxon sand on the G. D. Stump farm. In Clay district. Harrison County, the Rider Oil & Gas Co. is drilling on the Clyde Southern farm. In Murphy district, Ritchie County, Pope Brothers have made a location on the Leonard Donley farm. In the same district, the Hope Natural Gas Co. is fishing at 2,082 feet on the W. T. Frederick farm. This company is due in the Big Injun sand on the M. V. Gill farm.

In southwest district, Doddridge County, local parties have started to drill a test on the T. V. Gribble farm. In Central district, the McCall Oil & Gas Co. has the rig completed for a second test on the Bee heirs' farm. On Little Paw-Paw district, Marion County, the Owens Bottle & Machine Co. is drilling on the Margaret Clayton farm. In Liberty district, Marshall County, the Lynn Camp Oil & Gas Co. is rigging up on the Thomas Blake farm. In Greene district, Wetzel County, the Silver Hill Oil Co. has started to drill on the John W. Steele farm. In New Milton district, Doddridge County, Maxwell & Henderson have started to drill on the F. P. Burbridge farm. In Central district, the Imperial Oil & Gas Products Co. has made a location on the W. F. Hudkins farm.

In Greene district, Wetzel County, the Cook Petroleum Co. is hauling rig timbers to a second location on the O. R. Morgan farm. In Smithfield district, Roane County, the United Fuel Gas Co. is rigging up on the W. L. Harshberger farm. In Washington district, Calhoun County, the Hope Natural Gas Co. has a rig completed on the U. G. Downing farm. The Owens Bottle & Machine Co. has started to drill on the C. T. Brownlee farm, in Fairmont district, Marion County. In Clay district, Monongalia County, the Clay District Oil & Gas Co. has shut down to repair the rig on the Latham farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. is rigging up at a second test on the J. R. Jones farm. In Union district, the U. S. Stamping Co. has made a location on the J. V. Markey farm. In Center district, Witzel County, the Hope Natural Gas Co. is building a rig on the C. E. Yeater farm.

In McComas district, Lincoln County, the Star Producing Co. is due in the Big Injun sand at a test on the Walter Swann farm. In McElroy district, Tyler County, the Colonial Oil Co. is hauling tools to a location on the Cale Henderson farm. In Greene district, Wetzel County the Pittsburgh & West Virginia Gas Co. has started to drill on the Stephen Morgan farm. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. has started to drill on the V. B. Pyles farm. In the same district, the Lynn Camp Oil & Gas Co. is rigging up on the Thomas Blake farm. In Simpson district, Harrison County, the Aizpurin Gas Co. has abandoned the tools lost in its test on the Nathan Richards farm and will move the rig.

Southwest Pennsylvania

In Perry Township, Greene County, the Carnegie Natural Gas Co.'s test on the N. Cassidy farm is through the Bayard sand and dry in all formations. In Wayne Township, the Peoples Natural Gas Co. is testing for oil in the fourth sand on the Ingram Kent farm. In the same township, the Milliken Oil & Gas Co. is due in the sand on the William Cole farm. Kennedy, Brook & Co. have started to drill a second test on the Spencer Kennedy farm.

In Morris Township, Greene County, the Concord-Nineveh Oil & Gas Co. has a gasser in the Big Injun sand at No. 4 on the C. H. Andrews farm. In Wayne Township, H. T. Milliken & Co. have a light gasser in the Bayard sand at a test on the William Cole farm. In Whitely Township, the Equitable Gas Co.'s test on the S. Lemley farm is a gasser in the same formation. In Aleppo Township, the Manufacturers Light & Heat Co. has a 12-bbl. pumper in the fifth sand at a test on the B. P. McCracken farm.

On Penna Fork of Fish Creek, Springhill Township, Greene County, in the borough of New Freeport, the New Freeport Oil & Gas Co. has completed in the Gordon sand a test on the Gump heirs' farm which is a small gasser. In the same township, the Manufacturers Light & Heat Co. has completed drilling down to the Gordon stray sand its second test on the James Earnest farm. It is showing for a very light pumper. In Wayne Township, the South Penn Oil Co. has a fair producer at No. 7 on the Kent farm. The well was drilled to and through the fourth sand and has been averaging 27 bbls. a day.

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OIL MINING PROCESS IS PATENTED BY KANSAS PETROLEUM GEOLOGIST

A process for extracting petroleum by underground workings has been patented by John L. Rich, petroleum geologist of Ottawa, Kans. During 1922 and part of 1923 he spent much time in a study of the various methods of oil mining then practiced and of the possible application of mining methods in the United States. In this connection he did core drilling in the shallow fields of Kansas which, he says, gave results of a rather unexpected nature as to the conditions and degree of saturation of the oil sands.

His study, he says, had not progressed far before it became apparent that the mining methods as applied in France had very doubtful applicability to this country, for a number of reasons, but it also appeared that the oil sands could be attacked indirectly from tunnels driven close to them under conditions of safety and cost which would make such indirect mining methods attractive, even under home conditions.

A direct result of this work was the devising of a process for oil recovery by mining which is covered by the patent, issued September 9, 1924, which reads as follows:

The common method of recovering petroleum from its underground reservoirs by wells, fails to extract more than a small percentage of the oil originally present. Large amounts of oil remain irrecoverable by ordinary methods after the yield of the wells becomes too small to be commercially profitable. In some places, as in Alsace, France, and near Hanover, Germany, it has been found that by sinking shafts into the oil sands from the surface of the ground and driving tunnels or galleries within the oil bearing sands, it is possible to obtain a much larger percentage of oil than by means of wells alone.

This method of recovering oil by subterranean drainage into tunnels driven within the oil sand, while it has been successful in recovering a large percentage of the oil, is dangerous and costly because a spark from a pick striking hard rock or from any other cause is sufficient to set fire to the oil seeping into the galleries. The precautions which must be taken to guard against the spread of a fire through the mine and against explosions, add greatly to the cost of this method.

There is, further, a large loss of the more volatile constituents of the oil by evaporation into the strong current of air necessary for the proper ventilation.

The present invention is primarily designed to obviate the greater part of the difficulties and dangers inherent in the method of recovering petroleum by mining as heretofore practiced, while at the same time it retains the advantages of the increased percentage of recovery.

Description of Process

Other objects will be apparent from the following detailed description and the appended claims.

In the drawings:

Figure 1 is a cross section of a conventional form showing the relation of galleries and channels to the oil bearing stratum, both for cases where the gallery is driven above the oil sand and where it is driven below the sand.

Figure 2 is a longitudinal section through a shaft, gallery and channel, showing diagrammatically their relations to each other and also illustrating a method of ventilation designed to prevent the escape of gases into the gallery while channeling is in progress.

Figure 3 shows in detail a means for closing the top of a channel so that the gases arising therefrom do not escape into the gallery but may be drawn off through the channel.

Figure 4 shows a different form of device for closing the top of a channel which is suitable for carrying off and saving a larger volume of gas than could be cared for by the device illustrated in Figure 3.

Figure 5 is a diagrammatic ground plan showing shafts, galleries, channels and pits or wells in the channels for the collection of the oil prior to its removal by pumps; and showing also wells extending from the surface of the ground to the oil sand, through which well fluids may be introduced into the oil sand, for the purpose of driving the oil out into the channels in the galleries.

Figure 6 is a section along the line 6—6 of Figure 5, showing the movement of the fluids introduced into the wells and their relation to the oil sand, galleries and channels.

Methods of Operation

The process constituting my invention consists primarily of certain broad steps: (1) driving tunnels or galleries in the rocks either close above or close below the oil bearing stratum, and from these galleries cutting narrow slits or channels into or through the oil bearing stratum, these operations being performed by means of a channeling machine such as commonly employed in rock quarrying operations, or by any desired suitable means; (2) providing means whereby gases issuing from the channel while it is being cut, or subsequently, may be removed and saved without contaminating the air of the galleries; and (3) providing means whereby, if desired, oil may be forced into the channels cut as above specified, by artificial pressure applied to the oil bearing stratum through the agency of fluids introduced into it through wells drilled to it from the surface of the ground.

In practicing the process a shaft 1 is first sunk, if necessary, to the neighborhood of the oil bearing stratum 2, generally referred to as the oil sand, although it may be composed wholly or in part of materials other than true sand. From this shaft 1 a gallery or tunnel 3, or a plurality of such galleries, is driven in the rock either close above the oil sand as illustrated in the left hand portion of Figure 1, or close below said oil sand as shown in the right hand portion of this figure. These galleries are of any suitable or convenient dimensions and shape and are preferably constructed approximately parallel to the oil sand. I prefer to drive the gallery above the oil sand, and have so described the further details of the process, but it is to be understood that the invention is not limited to either arrangement.

From the gallery 3 a relatively narrow slit or channel 4 is cut into or through the oil sand by means of an ordinary rock channeling machine, A, or by any other suitable device. This channel may be of any desired width or depth, and may be situated at any convenient position in the gallery. It will, as a rule, extend for the full length of the gallery, but may be made shorter if desired, or may be made up of a number of sections that are not directly connected with each other. At convenient places along the gallery, there are provided pits or shallow wells 5 in the oil sand in such position that the oil may drain from the channels into them. From these pits or wells the oil may be pumped out to the surface of the ground by any suitable pumps and systems of piping (not shown.)

In order to prevent the contamination of the air of the galleries by the gases which issue from the channel as it is being cut, a tube or other suitable air conductor 6 extends down the shaft and along the gallery. It is connected at its outer end to a suction or exhaust fan or air pump of any desired type (not shown) and by this means a current is induced substantially as shown by the arrows in Figure 2. The gases or impure air are drawn out through the tube 6, while fresh air passes down the shaft 1, along the gallery 3, and past the open part of the channel 4 at the point where the rock channeling machine A is at work, and thence through the tube 6. The channeling machine and adjacent portions of the channel are inclosed by a flexible hood 7 of suitable design and size, connected to the end of the tube 6.

It is intended to cover portions of the

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channel 4 as completed by some suitable device to prevent the escape of the gas from the channel into the galleries. The precise character of the covering device will depend upon the volume of gas to be handled and other considerations. Where the volume of gas to be handled is not large, the channel may be covered with a semicylindrical pipe or tile 8, as shown in Figure 3, which may be connected at intervals with the exhaust air pipe 6 to permit the escape of gas from the channel 4. Provision may also be made for the removal of sections of the covering 8 at desired places for the purpose of cleaning out the accumulations of mud or sand which may have gathered in the channel. The channel cover 8 may be made gas tight by the application of cement, mud, or other sealing compound 9 along the edges of the members 8, as shown in Figure 3.

If the volume of gas is very large, and its confinement to the channel 4 might produce undue pressure, a device such as illustrated in Figure 4 may be used to cover the channel. This consists of a strip of sheet metal 10 bent into convenient shape as shown in Figure 4, and having its edges 11 inserted in the channel as shown. The junction of the metal sheet with the mouth of the channel may be gas tight by the application of cement, mud or some similar sealing compound 12 at the side of the sheet as shown.

Recovery of Oil

From the shaft 1, a single gallery with its channel may be driven, or several may be driven in various directions, and the oil to be recovered may be limited to that which naturally seeps into the channels. However, if the oil recovery contemplated by this invention is to be carried out most effectively, artificial pressure must be placed upon the oil sand to assist in forcing the oil out into the channels.

With this end in view, the shafts, channels, galleries and oil collecting wells may be arranged somewhat as diagrammatically illustrated in Figure 5, except that the galleries need not inclose a regular area as there shown. Situated with proper relation to the galleries and channels, and preferably within the area inclosed or partly inclosed by the galleries one or more wells 13 are sunk from the surface of the ground and properly cased. These wells may or may not be shot with nitroglycerin, as is found expedient. Into these wells 13, water, steam, air, gas or other fluid, or combination of these fluids may be forced under pressure sufficient to cause these fluids to displace the oil from its place in the sand and cause it to move toward and into the channels 4 and thence into the wells 5 from whence it is pumped as above stated. The general movement of fluids thus set up is shown digrammatically in Figure 6

Obviously variations may be made in the structure employed to carry out the process, and steps of the process may be used without others. In general it is to be understood that the invention is limited only by the scope of the appended claims.

I claim as my invention:

Inventor's Claims

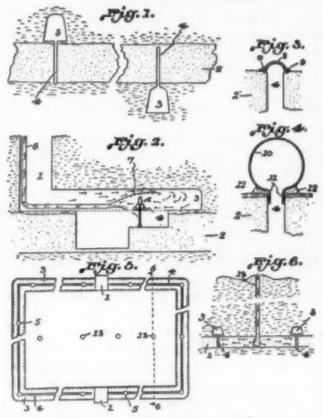
1. A process for the extraction of petroleum which comprises forming tunnels or galleries adjacent to the oil bearing stratum, and forming depressions in said channels for the collection of the oil, form which it may be removed as desired.

2. A process for the extraction of petroleum which comprises forming tunnels or galleries adjacent to the oil bearing stratum, cutting slits or channels from said galleries into the oil bearing stratum, and preventing escape of gas into the gallery while the channel is being cut.

3. A process for the extraction of petroleum which comprises sinking a shaft to a point adjacent to the oil bearing stratum, forming a tunnel or gallery adjacent said stratum, cutting slits or channels from the gallery into said stratum, and drawing off through the shaft the gases from the channel as it is being cut thereby preventing the escape of said gases into the gallery.

4. A process for the extraction of petroleum which comprises forming a gallery adjacent to the oil bearing stratum, cutting a channel from said gallery into said stratum, drawing off the gases from the channel as it is formed, and closing said channel as completed, whereby said gases are prevented from escaping into the gallery.

5. A process for the extraction of petroleum which comprises forming a gallery adjacent to the oil bearing stratum, cutting a channel from said galley into said stratum, forming depressions in said channel for the collection of oil, sinking a well into the oil bearing stratum,



Process for extracting petroleum by underground workings.

and forcing fluids under pressure through said well into said stratum to drive the oil into said channels.

6. A process for the extraction of petroleum which comprises sinking a shaft to a point adjacent the oil bearing stratum, forming a gallery leading from said shaft, cutting a channel from said gallery into said stratum, preventing the escape of gas from said channel into the gallery, forming depressions in said channel for the collection of oil, sinking a well into the oil bearing stratum, and forcing fluid under pressure through the well into the stratum to drive the oil into said channels.

OKLAHOMA OIL-BEARING SANDS ARE CORRELATED

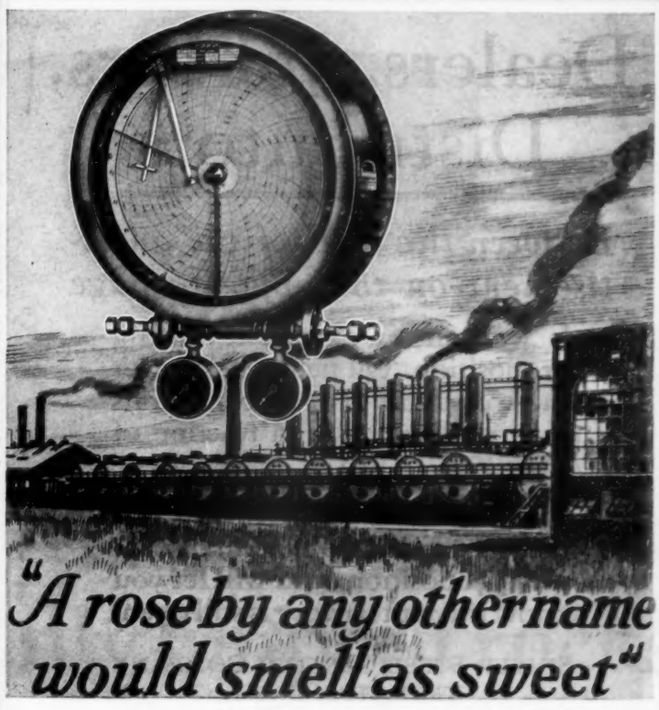
(Continued from Page 21)

It is a generally accepted fact that the Dutcher sand splits up as it goes south dividing into several parts as shown on the generalized chart and also on the detailed cross section. The Deaner sand, the Kingwood lime in the Deaner Pool, the Glenn sand of the Morris district, the Smith sand of the Wewoka Pool, the Youngstown sand, the Preston, the Rhodes, the Gilcrease sand in 9-9, and possibly the Skyes or Boggs sand on the west side of the Wewoka Pool, are all correlated as the upper member of the Dutcher group, while the Cromwell sand, the Papoose sand, the Wetumka and Quinn sands, have all been identified as the same horizon, which has been called the Lyons sand, or the lower member of the Dutcher series.

In making the accompanying map, the writer found considerable difficulty in deciding which name to use in such cases. If the local name were used, considerable confusion would result, and yet in some townships a sand which has been producing in an old locality for years has, through general usage, been given a name in some more recent locality. It seems hardly right to go back to the old locality and attach a name appended by some newcomer. And yet this had to be done in a few instances for the sake of uniformity.

Both the Tucker and the Booch sands will be found on the map although they are correlated as the same, and in a few cases the Taneha is listed rather than adopt its more modern equivalent.

The Oswego lime will be found listed in nearly every township in which depths are given, although in some instances it is given as Wheeler sand. The two



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OIL MINING PROCESS IS PATENTED BY KANSAS PETROLEUM GEOLOGIST

A process for extracting petroleum by underground workings has been patented by John L. Rich, petroleum geologist of Ottawa, Kans. During 1922 and part of 1923 he spent much time in a study of the various methods of oil mining then practiced and of the possible application of mining methods in the United States. In this connection he did core drilling in the shallow fields of Kansas which, he says, gave results of a rather unexpected nature as to the conditions and degree of saturation of the oil sands.

His study, he says, had not progressed far before it became apparent that the mining methods as applied in France had very doubtful applicability to this country, for a number of reasons, but it also appeared that the oil sands could be attacked indirectly from tunnels driven close to them under conditions of safety and cost which would make such indirect mining methods attractive, even under home conditions.

A direct result of this work was the devising of a process for oil recovery by mining which is covered by the patent, issued September 9, 1924, which reads as follows:

The common method of recovering petroleum from its underground reservoirs by wells, fails to extract more than a small percentage of the oil originally present. Large amounts of oil remain irrecoverable by ordinary methods after the yield of the wells becomes too small to be commercially profitable. In some places, as in Alsace, France, and near Hanover, Germany, it has been found that by sinking shafts into the oil sands from the surface of the ground and driving tunnels or galleries within the oil bearing sands, it is possible to obtain a much larger percentage of oil than by means of wells alone.

This method of recovering oil by subterranean drainage into tunnels driven within the oil sand, while it has been successful in recovering a large percentage of the oil, is dangerous and costly because a spark from a pick striking hard rock or from any other cause is sufficient to set fire to the oil seeping into the galleries. The precautions which must be taken to guard against the spread of a fire through the mine and against explosions, add greatly to the cost of this method.

There is, further, a large loss of the more volatile constituents of the oil by evaporation into the strong current of air necessary for the proper ventilation.

The present invention is primarily designed to obviate the greater part of the difficulties and dangers inherent in the method of recovering petroleum by mining as heretofore practiced, while at the same time it retains the advantages of the increased percentage of recovery.

Description of Process

Other objects will be apparent from the following detailed description and the appended claims.

In the drawings:

Figure 1 is a cross section of a conventional form showing the relation of galleries and channels to the oil bearing stratum, both for cases where the gallery is driven above the oil sand and where it is driven below the sand.

Figure 2 is a longitudinal section through a shaft, gallery and channel, showing diagrammatically their relations to each other and also illustrating a method of ventilation designed to prevent the escape of gases into the gallery while channeling is in progress.

Figure 3 shows in detail a means for closing the top of a channel so that the gases arising therefrom do not escape into the gallery but may be drawn off through the channel.

Figure 4 shows a different form of device for closing the top of a channel which is suitable for carrying off and saving a larger volume of gas than could be cared for by the device illustrated in Figure 3.

Figure 5 is a diagrammatic ground plan showing shafts, galleries, channels and pits or wells in the channels for the collection of the oil prior to its removal by pumps; and showing also wells extending from the surface of the ground to the oil sand, through which well fluids may be introduced into the oil sand, for the purpose of driving the oil out into the channels in the galleries.

Figure 6 is a section along the line 6—6 of Figure 5, showing the movement of the fluids introduced into the wells and their relation to the oil sand, galleries and channels.

Methods of Operation

The process constituting my invention consists primarily of certain broad steps: (1) driving tunnels or galleries in the rocks either close above or close below the oil bearing stratum, and from these galleries cutting narrow slits or channels into or through the oil bearing stratum, these operations being performed by means of a channeling machine such as commonly employed in rock quarrying operations, or by any desired suitable means; (2) providing means whereby gases issuing from the channel while it is being cut, or subsequently, may be removed and saved without contaminating the air of the galleries; and (3) providing means whereby, if desired, oil may be forced into the channels cut as above specified, by artificial pressure applied to the oil bearing stratum through the agency of fluids introduced into it through wells drilled to it from the surface of the ground.

In practicing the process a shaft 1 is first sunk, if necessary, to the neighborhood of the oil bearing stratum 2, generally referred to as the oil sand, although it may be composed wholly or in part of materials other than true sand. From this shaft 1 a gallery or tunnel 3, or a plurality of such galleries, is driven in the rock either close above the oil sand as illustrated in the left hand portion of Figure 1, or close below said oil sand as shown in the right hand portion of this figure. These galleries are of any suitable or convenient dimensions and shape and are preferably constructed approximately parallel to the oil sand. I prefer to drive the gallery above the oil sand, and have so described the further details of the process, but it is to be understood that the invention is not limited to either arrangement.

From the gallery 3 a relatively narrow slit or channel 4 is cut into or through the oil sand by means of an ordinary rock channeling machine, A, or by any other suitable device. This channel may be of any desired width or depth, and may be situated at any convenient position in the gallery. It will, as a rule, extend for the full length of the gallery, but may be made shorter if desired, or may be made up of a number of sections that are not directly connected with each other. At convenient places along the gallery, there are provided pits or shallow wells 5 in the oil sand in such position that the oil may drain from the channels into them. From these pits or wells the oil may be pumped out to the surface of the ground by any suitable pumps and systems of piping (not shown.)

In order to prevent the contamination of the air of the galleries by the gases which issue from the channel as it is being cut, a tube or other suitable air conductor 6 extends down the shaft and along the gallery. It is connected at its outer end to a suction or exhaust fan or air pump of any desired type (not shown) and by this means a current is induced substantially as shown by the arrows in Figure 2. The gases or impure air are drawn out through the tube 6, while fresh air passes down the shaft 1, along the gallery 3, and past the open part of the channel 4 at the point where the rock channeling machine A is at work, and thence through the tube 6. The channeling machine and adjacent portions of the channel are inclosed by a flexible hood 7 of suitable design and size, connected to the end of the tube 6.

It is intended to cover portions of the

channel 4 as completed by some suitable device to prevent the escape of the gas from the channel into the galleries. The precise character of the covering device will depend upon the volume of gas to be handled and other considerations. Where the volume of gas to be handled is not large, the channel may be covered with a semicylindrical pipe or tile 8, as shown in Figure 3, which may be connected at intervals with the exhaust air pipe 6 to permit the escape of gas from the channel 4. Provision may also be made for the removal of sections of the covering 8 at desired places for the purpose of cleaning out the accumulations of mud or sand which may have gathered in the channel. The channel cover 8 may be made gas tight by the application of cement, mud, or other sealing compound 9 along the edges of the members 8, as shown in Figure 3.

If the volume of gas is very large, and its confinement to the channel 4 might produce undue pressure, a device such as illustrated in Figure 4 may be used to cover the channel. This consists of a strip of sheet metal 10 bent into convenient shape as shown in Figure 4, and having its edges 11 inserted in the channel as shown. The junction of the metal sheet with the mouth of the channel may be gas tight by the application of cement, mud or some similar sealing compound 12 at the side of the sheet as shown.

Recovery of Oil

From the shaft 1, a single gallery with its channel may be driven, or several may be driven in various directions, and the oil to be recovered may be limited to that which naturally seeps into the channels. However, if the oil recovery contemplated by this invention is to be carried out most effectively, artificial pressure must be placed upon the oil sand to assist in forcing the oil out into the channels.

With this end in view, the shafts, channels, galleries and oil collecting wells may be arranged somewhat as diagrammatically illustrated in Figure 5, except that the galleries need not inclose a regular area as there shown. Situated with proper relation to the galleries and channels, and preferably within the area inclosed or partly inclosed by the galleries one or more wells 13 are sunk from the surface of the ground and properly cased. These wells may or may not be shot with nitroglycerin, as is found expedient. Into these wells 13, water, steam, air, gas or other fluid, or combination of these fluids may be forced under pressure sufficient to cause these fluids to displace the oil from its place in the sand and cause it to move toward and into the channels 4 and thence into the wells 5 from whence it is pumped as above stated. The general movement of fluids thus set up is shown digrammatically in Figure 6

Obviously variations may be made in the structure employed to carry out the process, and steps of the process may be used without others. In general it is to be understood that the invention is limited only by the scope of the appended claims.

I claim as my invention:

Inventor's Claims

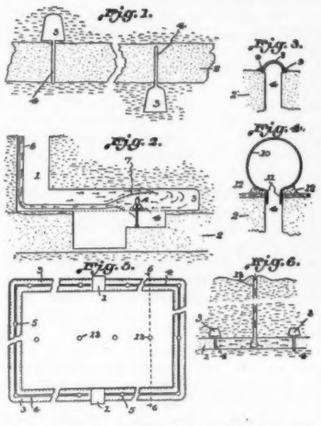
1. A process for the extraction of petroleum which comprises forming tunnels or galleries adjacent to the oil bearing stratum, and forming depressions in said channels for the collection of the oil, form which it may be removed as desired.

2. A process for the extraction of petroleum which comprises forming tunnels or galleries adjacent to the oil bearing stratum, cutting slits or channels from said galleries into the oil bearing stratum, and preventing escape of gas into the gallery while the channel is being cut.

3. A process for the extraction of petroleum which comprises sinking a shaft to a point adjacent to the oil bearing stratum, forming a tunnel or gallery adjacent said stratum, cutting slits or channels from the gallery into said stratum, and drawing off through the shaft the gases from the channel as it is being cut thereby preventing the escape of said gases into the gallery.

4. A process for the extraction of petroleum which comprises forming a gallery adjacent to the oil bearing stratum, cutting a channel from said gallery into said stratum, drawing off the gases from the channel as it is formed, and closing said channel as completed, whereby said gases are prevented from escaping into the gallery.

5. A process for the extraction of petroleum which comprises forming a gallery adjacent to the oil bearing stratum, cutting a channel from said galley into said stratum, forming depressions in said channel for the collection of oil, sinking a well into the oil bearing stratum,



Process for extracting petroleum by underground workings.

and forcing fluids under pressure through said well into said stratum to drive the oil into said channels.

6. A process for the extraction of petroleum which comprises sinking a shaft to a point adjacent the oil bearing stratum, forming a gallery leading from said shaft, cutting a channel from said gallery into said stratum, preventing the escape of gas from said channel into the gallery, forming depressions in said channel for the collection of oil, sinking a well into the oil bearing stratum, and forcing fluid under pressure through the well into the stratum to drive the oil into said channels.

OKLAHOMA OIL-BEARING SANDS ARE CORRELATED

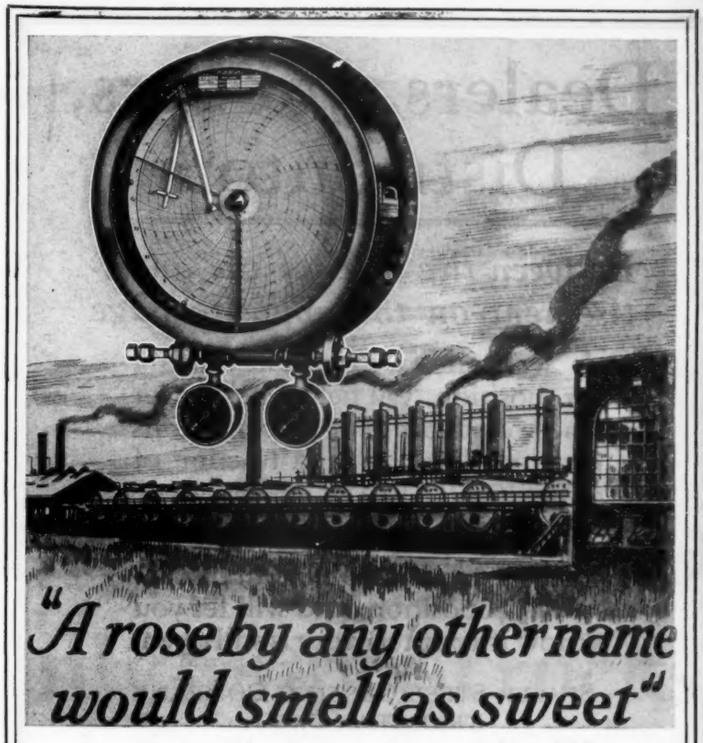
(Continued from Page 21)

It is a generally accepted fact that the Dutcher sand splits up as it goes south dividing into several parts as shown on the generalized chart and also on the detailed cross section. The Deaner sand, the Kingwood lime in the Deaner Pool, the Glenn sand of the Morris district, the Smith sand of the Wewoka Pool, the Youngstown sand, the Preston, the Rhodes, the Gilcrease sand in 9-9, and possibly the Skyes or Boggs sand on the west side of the Wewoka Pool, are all correlated as the upper member of the Dutcher group, while the Cromwell sand, the Papoose sand, the Wetumka and Quinn sands, have all been identified as the same horizon, which has been called the Lyons sand, or the lower member of the Dutcher series.

In making the accompanying map, the writer found considerable difficulty in deciding which name to use in such cases. If the local name were used, considerable confusion would result, and yet in some townships a sand which has been producing in an old locality for years has, through general usage, been given a name in some more recent locality. It seems hardly right to go back to the old locality and attach a name appended by some newcomer. And yet this had to be done in a few instances for the sake of uniformity.

Both the Tucker and the Booch sands will be found on the map although they are correlated as the same, and in a few cases the Taneha is listed rather than adopt its more modern equivalent.

The Oswego lime will be found listed in nearly every township in which depths are given, although in some instances it is given as Wheeler sand. The two



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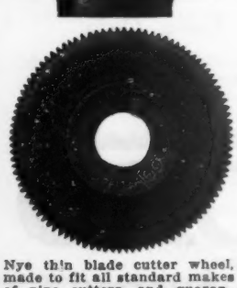

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are stratigraphically the same horizon, although the Oswego should not be called Wheeler unless it is sandy.

Bartlesville the Backbone

The Bartlesville sand is generally regarded as the backbone of Oklahoma's petroleum industry. Wells in that horizon are usually noted for their long life and for the excellent quality of the oil. This sand apparently thins out west of Pawhuska in Osage County and is absent over a number of townships including most of Pawnee County and possibly all of the country north and west of a line from Burbank to Perry.

The Burbank sand, while in the Bartlesville horizon, is apparently not the Bartlesville sand. As J. M. Sands of the Phillips Petroleum Co., Bartlesville, Okla., explains it: "While the Burbank sand does not seem to be connected with the Bartlesville sand, it appears to occur in the same stratigraphic position. As far as we have been able to ascertain the sand of this field is a delta deposit. A small amount of this sand is present at the southern end of the Mervine Field, 10 miles to the west, in Kay County, and it appears to be continuous with the Burbank sand. There are a few other local sand bodies in the western Osage which correlate with the Burbank sand, but do not seem to be connected with it. Therefore, while the Bartlesville sand was apparently deposited from a land mass to the east, this sand has probably been deposited in the same sea and at the same time, but was derived from a land mass to the west. While there may be several such deposits, the sand in the Burbank Field is probably the largest and most productive of these. The thickness of the producing horizon varies from 50 feet to 80 feet. It is a fine-grained, calcareous sand interstratified, to a small extent, with thin beds of blue or brown shale."

Over a large part of the area represented on the map, the Bartlesville horizon is so broken up or split into several parts that it is difficult to determine just what stratum to call the top of it. The base of the Glenn of Bartlesville is much more easily determined, and in many townships, if the two figures following the name Glenn were added—that is, the depth to the sand plus the thickness—a more uniform figure would be secured.

In the case of the Oswego lime there is a similar difficulty. The farther south one goes, the more difficult it is to tell where the Oswego begins and where it ends in a log. The big lime above it gradually peters out as shown on the generalized sketch and after the two more or less come together, a geologist can just about take his choice as to what he calls the top of the Oswego lime. There may be several thin strata of limestone logged and he can include all or just a part of them according to his interpretation.

Notable Deep Wells

The deepest sand in the State that was ever penetrated (considering depth from the surface) was in the Kingwood Oil Co.'s test in Section 7-7-10, Hughes County. In this well, the Wilcox horizon was reached at 5,206 feet, according to the best correlations available, and carried water at the bottom after drilling through 38 feet of white sand to 5,281 feet.

One of the deepest sands that the drill has reached in this part of Oklahoma, considering the age of the formations above it, is in an old Prairie Oil & Gas Co. duster in Section 23-17-9, Creek County. It was completed October 30, 1923 in white sand at 4,324-44 feet. This sand is 1,074 feet below the top of the Wilcox sand in that well, and a hard gray lime at 3,684 feet was probably the top of the siliceous lime.

It is an interesting fact that a great many deep dry holes in the region south of Tulsa have been drilled as a result of failure to find oil in upper sands. They were probably off structure to begin with and therefore had little chance of finding anything in the lower horizons. One of the most important tests from a geological standpoint that can possibly be drilled is said to be contemplated by two companies owning most of a prolific Wilcox sand dome in Okmulgee County. This test will be located on the top of the structure and will go far below the Turkey Mountain level. The log of the above mentioned Prairie well shows numerous sands and sandy limes below that point.

The deepest well that ever produced oil in Oklahoma — again considering depth from the surface—was the Gypsy Oil Co.'s test on the White Mule farm in Section 24-22-1e, Noble County. This well made 100 bbls. initially in October of 1922 following a shot in the Burgess sand, top of lime, at 4,377 feet. In January of the next year it was deepened and encountered water in the Wilcox at 4,662-65 feet.

New Deep Well in Garber

The deepest production of commercial importance that the State has ever known is in the Garber Field where the Sinclair Oil & Gas Co.'s No. 25 Belveal, in Section 24-22-4w, Garfield County, found about 500-bbl. initial production at 4,377 feet on April 2. The sand depth map was completed while an argument over correlation of the horizon was still in progress and consequently the name of the sand had to be omitted. Several geologists maintained that it was the Bartlesville sand, basing their conclusions partly on the theory that the formations thicken to the southwest from the Tonkawa and Billings pools. Roxana, Carter, Marland, Gypsy and other geologists, however, are convinced that the only question about it is whether the oil is coming from the Wilcox or the Turkey Mountain. Samples of the pay formation are said to contain very little sand, most of it being lime. There are some typical rounded, frosted Wilcox grains, along with some green material and some brown sugary-looking lime, resembling maple sugar, which is typical of the Ordovician siliceous lime, or Turkey Mountain.

The 200 feet or so of lime found at 4,100 feet is identified by those who advance the Wilcox theory as Oswego. Under that is some shale and the Tyner is immediately below, the explanation being that the Mississippi lime is entirely absent. The way one geologist who knows that area explains it, the sequence is typical and the production is coming both from the Wilcox and the Turkey Mountain. The 500 bbls. production in the top of the sand is Wilcox and when the well was deepened a few feet, it went into the siliceous lime where the big pay, 120 bbls. an hour, was found.

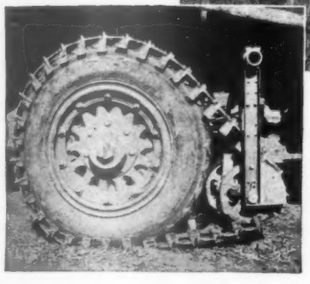
The absence of the Mississippian is a condition that prevails over much of the northwestern part of the area shown on the accompanying map, in the opinion of reliable geologists. The formations spread apart from the west to the east up there in much the same way as they do from north to south, although the spread is not so great.

The deepest producing horizon in the region shown on the map is the siliceous lime, of Ordovician age. Just a few years ago everything below the Mississippi lime was labeled Wilcox sand, without differentiating between the four separate horizons in that series as geologists do now, everything in the siliceous lime at the present is called Turkey Mountain, and the chances are that future detailed microscopic work will reveal distinctions in the Ordovician that are not now generally known.

Perhaps the most interesting production from the siliceous lime is in the Hubbard Pool, northwest of Tonkawa, in Kay County. A fault which runs diagonally through the Hubbard structure cuts out practically all of the Mississippian formations so that the Marland Oil Co.'s discovery well, No. 1 Hubbard, in Section 12-26-2w, 200 or 300 feet down the side of the structure, reached the siliceous lime at 3,710 feet.

The discovery of faults has been a marked feature of the development of pools during the past year. In addition to the Hubbard fault, the Tonkawa Field can boast one and so can the Cromwell Field and the Depew Field in 15-8. The origin of faults in Osage and Creek Counties was the subject of a detailed paper at the recent convention of the American

The Endless Road of Steel



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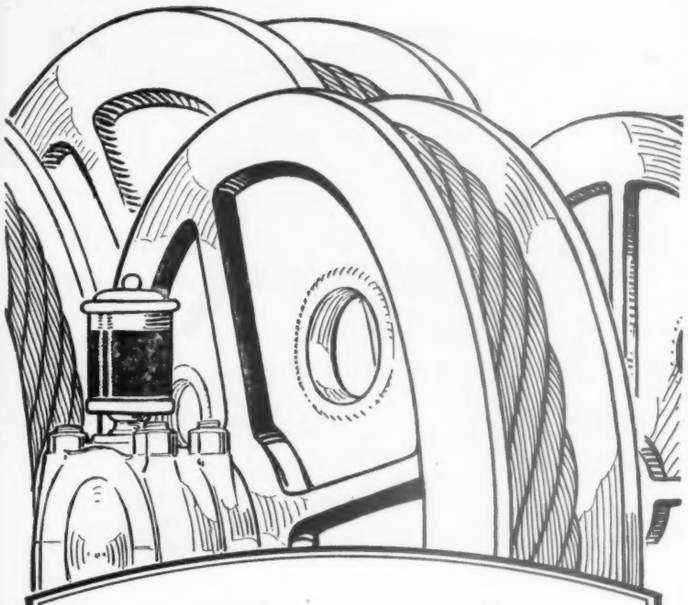

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Association of Petroleum Geologists at Wichita, Kans., but it would take a civil engineer to understand the explanation, and furthermore, nearly everybody agreed to disagree with the conclusions. This is another geological subject that is sure-fire for starting an argument.

The Dutcher sand has the honor of mothering the largest initial producer ever drilled in Oklahoma, or at least the well that is tied for the record. It was the Roland Oil Co.'s No. 2 Alexander, in Section 2-15-8, Creek County. This well was deepened to the Dutcher sand on May 15, 1922, and started flowing all over the landscape at the estimated rate of 20,000 bbls. By actual gauge several days later it made 16,000 bbls. and within 75 days days had poured 500,000 bbls. of oil into the tanks. When it stopped flowing on July 29, it was deepened into water and was plugged back for a small pumper.

The Dutcher sand in this district was responsible for a number of enormous gushers during the following year, among which was the U. S. Cities Corp. and Lorraine Petroleum Co.'s No. 8 Deere, in Section 23-16-8, which flowed 1,600 bbls. in the first one and one-half hours and put 12,000 bbls. in the tanks the first day. The Laurel Oil & Gas Co.'s No. 1 Knoll, in Section 22-16-8, likewise made a spectacular record. After flowing uncontrolled for days, it was still good for 8,000 bbls. when finally gauged.

The Dutcher sand is noted for the large initial production and rapid decline of its wells. The gravity of the oil is generally low, averaging around 30 to 31 degrees Baume. The lower Dutcher members, however, produce a high grade oil as a rule, Cromwell and Papoose crudes averaging about 38 to 40 degrees.

While the Bartlesville sand wells are not as large on the whole as Dutcher wells, the decline is very slow and some old producers which were drilled more than 20 years ago are still making some oil.

Wilcox Characteristics

The characteristics of the four sands in the Wilcox series were discussed in detail in an article by Luther White and Frank Greene, which was published in The Oil and Gas Journal March 13, 1924. Summarizing this article, it may be said in general that the Mounds sand, or Wilcox of the Okmulgee district, has not been exhausted and abandoned in any of the known pools. The wells come in for large initial production, and while they decline rapidly, they soon settle to a steady production which is maintained for a long time. Ultimate production from this sand may reach 35,000 bbls. per acre in some areas.

The Hominy sand, or second Wilcox, is irregular both as to initial production and staying powers, some wells producing large amounts of oil while others soon go to water. The ultimate production is probably less than half that of the main Wilcox sand, or less than 15,000 bbls. an acre. The Turkey Mountain horizon is also exceedingly irregular, some wells suffering a rapid decline, and the ultimate production is probably not greater than 5,000 to 7,000 bbls. an acre.

The Misener sand, which is the highest in the series, but the least important, is probably the most irregular of the four, some wells making large amounts of oil but the ultimate output is probably less than 10,000 bbls. an acre.

The Importance of Good Logs

One of the greatest obstacles in the path of the geologist who attempts to correlate oil sands over a wide stretch of country is the absence of accurate and dependable data due to faulty logs. The oil and gas conservation bureau of the State Corporation Commission now has on file in Oklahoma City the logs of more than 85,000 wells which have been drilled for oil or gas in the State, but it is doubtful if more than a small percentage of these are really accurate descriptions of the formations through which the drill passed. Nowhere is the need of cooperation on the part of the wildcatter and driller more forcibly illustrated than in making a cross-section diagram of any part of the country. On Mr. Sherwood's drawing, which is a part of the accompanying insert, this fact is apparent. Probably 10,000 logs are missing from the State's records, and most of these can never be secured as they have been lost by operators, or were never kept. In recent years, the bureau has been able to get nearly all logs, but there are still some irresponsible wildcatters who fail to contribute their part to the advancement of general knowledge, and by no means all of the logs turned into the department now are reliable.

One excellent small Wilcox sand pool was opened up recently because a geologist refused to accept the log of one dry hole. The well had been drilled by some "outside" parties to a certain depth where he had a strong suspicion that they lost the hole. The well had been drilled on down "with a pencil," however, in order to collect dry hole money and the operators got away with it. Because of this rock hound's familiarity with the formations in that country, he was able to "doctor" the log and draw his conclusions from that, resulting in a new pool.

There are practical difficulties in recording the formations encountered in a well. It is much easier for a driller to tell when he passes from a sand into a shale than from shale into sand. In rotary drilling, accurate logging is difficult unless the core barrel is used frequently. When a large flow of gas is lifting the tools so that it is hard to tell sometimes when they are on the bottom, measurements are mere guesswork. With a heavy flow of gas and oil coming several thousand feet up the pipe, it is likewise no easy task to collect samples. Drillers are generally conceded to be conscientious as a class, and of course, all of them cannot have geological training. The more detailed their description of a formation the better for correlation work. It is the one careless driller out of a dozen who causes difficulties, leaving a gap that sometimes is almost impossible to bridge.

At a recent meeting of the Tulsa Geological Society, it was brought out that in all known instances where a body of seemingly pure sand had been core drilled there were thin streaks of impervious material running through it, too thin to be detected by the driller. If this is a general condition, it will explain many mysterious facts concerning the accumulation of oil and gas in a sand.

Enter the Paleontologist

The correlation of sands over wide areas is an extremely difficult study, as explained at the beginning of this article. It is a job for an experienced geologist because it requires a close scrutiny of samples from several key horizons in each well. The geologist of today studies samples of sand under a compound microscope, and if he identifies formations by a microscopic study of the fossil remains in the rocks, he is a micro-paleontologist. Dr. David White told the assembled geologists at Wichita that about 40 young men and women were studying the science of paleontology for oil field work, which is a greater number than all of those in the profession in this country outside of the oil business. Some of the largest companies in the business have already assembled valuable collections of samples from wells. They have geologists who do nothing else, and they are making valuable contributions to the general knowledge of subsurface conditions.

In presenting the accompanying map, the writer fully expects that many a geologist will utter the familiar expression so often heard privately when one rock hound passes judgment on the theories of another: "He's crazy as hell." But local discrepancies are unavoidable and the compilation represents the work of some of the best talent in the Mid-Continent Field.

A few other peculiarities about sands worthy of mention are that the Dutcher sand produces largely on structure in the region roughly west and south of Bristow, and the oil is of high gravity, while in southern Tulsa County, eastern Creek and Okmulgee Counties, it produces without definite relation to structure and the oil is of lower gravity. In a few cases, the Dutcher produces oil which has entered the sand along a fault plane from the Wilcox horizon below. The Depew

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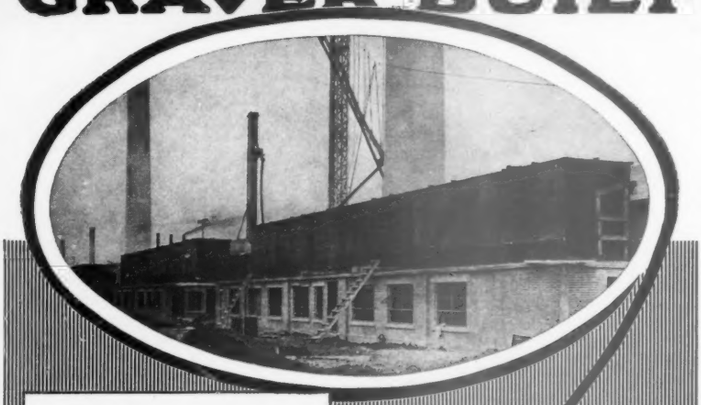

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Field is a type locality illustrating this, and gravity of the oil varies considerably from one lease to another.

The Bartlesville, in northern Oklahoma, doesn't follow structure very definitely and production is determined by local sand conditions. Just why the Bartlesville produces better and over broader areas in northern Oklahoma than it does farther south where it is thicker but frequently carries salt water, is a problem that has not been worked out.

Another peculiarity that has not been explained exists in northwestern Osage and Kay Counties and the surrounding region. Where the Bartlesville or Burbank sands are not present, red rock is almost always reported in that stratigraphic position. This condition extends up into Kansas.

An important feature of the Hunton lime that should be emphasized is the danger of mistaking it for the Wilcox in Okfuskee County and other southern districts. In fact, many believe that numerous wells have quit in the Hunton lime during the past several years without going to the Wilcox because they encountered a white material carrying water at the base of the Chattanooga black shale.

Following is a table showing the sequence of sands referred to in this article, with the horizons that are considered by the consensus of geological opinion to be equivalent to them:

Following is some data on a few townships received too late to put on the map:

Frankfort District

Section 2-29-6; elevation, 1,195 feet.

Sand—	Prod.	Depth	Thick.
Cleveland	Oil	2,041	135
Oswego		2,555	55
Bartlesville	Oil	2,750	20
Burgess	Oil	2,905	105

Dry Hole

Section 32-17-5; elevation, 971 feet.

Sand—	Prod.	Depth	Thick.
Oswego	Show oil	3,265	65
Prue	Gas	3,330	40
Bartlesville	Gas, show oil	3,660	12
Wilcox	Water	4,212	

Chandler Gas Well

Section 7-14-4; elevation, 961 feet.

Sand—	Prod.	Depth	Thick.
Cleveland	Gas	2,967	33
Peru	Gas	3,305	5

Gas Well

Section 34-9-6; elevation 950 feet (app.).

Sand—	Prod.	Depth	Thick.
Sand	Gas	1,980	30
Sand	Show oil	2,415	17
Sand	Gas	2,994	18

Sequence of Sands, Correlated Horizons

Hoy—At Garber only.
Hotson—At Garber only.
Blackwell—At Blackwell.
Newkirk—At Mervine.
Hoover, Upper Elgin
Middle
Lower
Carmichael
Endicott
Tonkawa—Stalnaker at Blackwell.
2,100-foot at Ponca.
Layton—Swaggart at Deer Creek
Bruner.
Cleveland—Seminole Conglomerate.
Big Lime
Peru—Base of Big Lime.
Oswego Lime—Wheeler.
Ft. Scott lime.
Prue—Squirrel
Bixler
Perryman
Skinner)
Red Fork) Equivalent?
Bartlesville—Glenn
Gas sand of Morris
Salt sand
Burbank*
Tucker—Booch
Taneha
Squaw
Dutcher (Upper)—Deaner
Doggett
Rhodes
Preston
Gilcrease
Youngstown
Glenn of Morris
Smith of Wewoka
Sykes of Wewoka*
Lyons—Lower Dutcher
Cromwell
Papoose
Wetumka
Quinn
Burgess—Top of Mississippi lime
Misener—In 14-10 and 15-10
Hunton—White lime
St. Clair marble
Wilcox—Main Wilcox of Okmulgee
Mounds
Hominy—Second Wilcox
Turkey Mountain—Siliceous lime

The writer wishes to thank those geologists whose names appear on the map in the insert for their generous assistance and cooperation in this work. In addition to those mentioned, some correlations made by George Morgan and Dr. J. P. Umpleby on the Hunton lime in the southern portion of the area were used. Arthur Truex of the Twin State Oil Co. and L. G. Welch of the New England Oil & Pipe Line Co. also furnished some valuable information.

CANADIAN FIELDS

(Continued from Page 44)

the development of wet gas and gasoline production in the Royalite Oil Co.'s No. 4 on Section 7-20-2w5. The Royalite is now reported assembling materials and constructing a camp on the new location northwest of No. 4. It is now stated that the wet gas and gasoline production in No. 4, which is making 300 bbls. of light gravity gasoline a day, comes from a break in the Madison lime, this well being the only one in the Rocky Mountain region producing oil from the Madison. D. A. McDonald and associates of Vancouver, B. C., who last year drilled an unsuccessful test for oil on the McIntyre ranch near Magrath, are reported moving part of the equipment and casing to Okotoks for a test in the Turner Valley Field. Besides the Royalite test now rigging up north of No. 4, the Royalite has located a second test south of the big producer. Rotary outfits will be used for both the Royalite tests. W. D. Lundy is reported to have secured leases on subdivisions 12 and 13, Section 5-20-2w5, for the Advance Oil Co., which will also drill two tests. The McLeod Oil Co. will also do some drilling, and the Illinois-Alberta Oil & Refining Co. test on Section 12-20-3w5 may be deepened.

In Sweetgrass district, southern Alberta, stormy weather and bad roads have prevented resumption of drilling operations. Canadian Oil & Refining (Rogers-Imperial) Section 29-1-11w4, is in shape to resume drilling as soon as additional casing and supplies can be trucked to the site. This test is down around 2,700 feet and is being carried below the big gas sand for oil. Imperial Oil, Ltd., is assembling a crew to resume work on Dead Horse Coulee No. 2, a mile north of the Rogers, which was shut down last fall at 1,000 feet. Gas is being piped from the Rogers-Imperial to No. 2 to furnish power. L. R. Olsen and associates of Coutts, Alta., will drill west of Coutts, near the abandoned site of the Imperial Oil, Ltd., Red Coulee well.

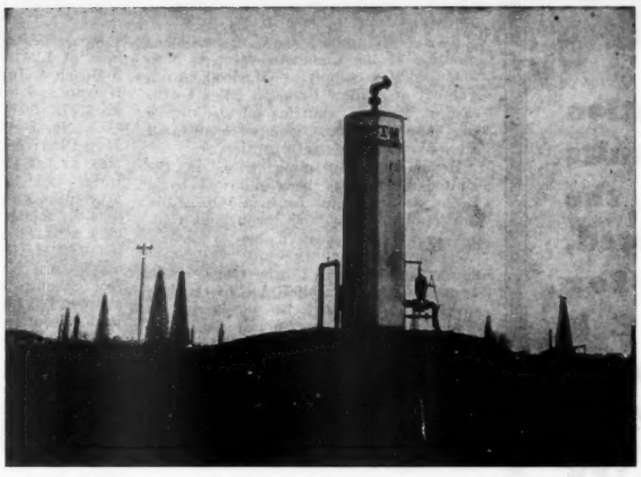
In the foothills west of Nanton, Imperial Oil, Ltd., is getting ready to resume drilling on its Rice Creek test, in Willow Creek district.

Irma-Wainwright

In the Irma-Wainwright Field the merger of various local oil interests in the new Western Consolidated Oils, Ltd. is reported complete. Officers of the new company are: President, A. B. Palmer, Vancouver; vice president, Dr. C. C. Tatham; secretary treasurer, George A. Robinson; managing director, Robert Spencer; director, P. R. Macdonald, Vancouver. D. O. Credille will be field superintendent, and two drilling outfits will be operated through the season. The company now holds some 30,000 acres of leases, and one of its new tests will, it is reported, be an offset to the British Petroleums producers.

It is reported tests of the heavy crude from British Petroleums No. 4 by a new cracking process show the following: Gasoline fraction, 17.5 per cent; light oil fraction, 15 per cent; distillate No. 3, 532 to 680 degrees, 10 per cent medium oil fraction; distillate No. 4, 680 to 700 degrees, 16 per cent; distillate No. 5, 1 per cent.

It is estimated that reduction of the duty on drilling machinery and casing together with removal of the sale tax, provided for under the new Dominion



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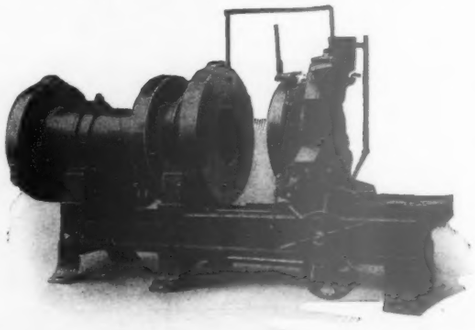

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budget, will mean a saving of from $7,000 to $10,000 on the cost of drilling an average well in the Alberta fields.

As a result of recent spring floods the gas line of the Canadian Western Natural Gas Co. supplying Macleod, Alta., was cut at Willow Creek, 3 miles northeast of Macleod, shutting off the town's gas supply. Connections were restored after about a day's interruption.

Reduction of gasoline prices in the United States has been followed by a 1-cent reduction by Imperial Oil, Ltd., this reduction applying throughout Canada except British Columbia, where reductions were made recently. The reduction is stated to be the result of an accumulation of gasoline due to the late spring and will not be permanent as crude prices have not been reduced.

NORTH CENTRAL TEXAS

(Continued from Page 32)

Mid-Kansas Oil & Gas Co.	25	
Panhandle Refining Co.	195	
Prairie Oil & Gas Co.	15	
Sinclair Oil & Gas Co.	390	
The Texas Co.	1,600	
Texhoma Oil & Ref. Co.	600	
Miscellaneous	5,920	
Total		9,685
Eastland-Comanche		
Humble Oil & Ref. Co.	215	
Magnolia Petroleum Co.	1,125	
Mid-Kansas Oil & Gas Co.	235	
Prairie Oil & Gas Co.	125	
Sinclair Oil & Gas Co.	30	
The Texas Co.	155	
Texas & Pacific Coal & Oil Co.	125	
Miscellaneous	1,870	
Total	3,880	
Miscellaneous Pools		
Wilbarger County	6,115	
Montague County	75	
Jack County	22	
Palo Pinto County	645	
Brown County	1,175	
Coleman County	70	
Callahan County	3,745	
Mitchell County	1,805	
Reagan County	13,820	
Scurry County	10	
Carson County	2,325	
Hutchinson County	647	
Wheeler County	20	
Gray County	55	
Total		30,529
Total this week		147,295
Total last week		145,630
Gain		1,662

Wichita County Completions

Couch and others' No. 13 Donohoe, 35 bbls. at 1,335 feet; Fisher and others' No. 9 Barker, 5 bbls. at 687 feet; No. 10 Barker, 25 bbls. at 750 feet; Magnolia Petroleum Co.'s No. 2 Morgan, 10 bbls. at 1,660 feet; No. 22 Beach, 50 bbls. at 1,202 feet; Dale Oil Corp.'s No. 8 Jennings, 25 bbls. at 1,462 feet; Gardner and others' No. 5 Watkins, 100 bbls. at 1,773 feet; Hammond and others' No. 1 Waggoner, dry at 2,033 feet; Kruger and others' No. 12 Allen & Kemp, 60 bbls. at 1,415 feet; Magnolia Petroleum Co.'s No. 12 Douglas, dry at 1,580 feet; Minn-Tel Oil Co.'s No. 7 Roller, dry at 1,258 feet; Norba Oil Co.'s No. 7 Waggoner, dry at 1,540 feet; O'Neil and others' No. 14 Bravo, 75 bbls. at 1,389 feet; Perkins and others' No. 14 Burnett, 46 bbls. at 1,824 feet; Texhoma Oil & Refining Co.'s No. 16-B Burnett, 55 bbls. at 1,590 feet; No. 2-E Burnett, 57 bbls. at 1,593 feet; No. 1 Throckmorton, dry at 1,964 feet.

Wilbarger County Completions

Atlantic Oil Producing Co.'s No. 1 Parker, dry at 2,501 feet; Barkley and others' No. 1 Stephens, 2,000,000 feet of gas at 1,765 feet; Continental Oil Co.'s No. 3 Zipperle, 55 bbls. at 1,347 feet; Electra Gulf Oil Co.'s No. 1 Bond, dry at 2,045 feet; Hamilton and others' No. 1 Neal, dry at 2,206 feet; Humble Oil & Refining Co.'s No. 10 Castlebury, 225 bbls. at 1,315 feet; McCamey and others' No. 5 Richardson, 45 bbls. at 1,336 feet; Mulligan and others' No. 1 Waggoner, dry at 1,456 feet; Prince Brothers' No. 1 Zipperle, dry at 2,307 feet; South Vernon Oil Co.'s No. 14 Stephens, 200 bbls. at 1,302 feet; Texhoma & Allday No. 1 Bettes, dry at 2,120 feet; Winnepeg Oil Co.'s No. 5 Bond, 310 bbls. at 2,310 feet; No. 6 Bond, 385 bbls. at 2,285 feet.

Archer County Completions

Carter and others' No. 6-C White, 35 bbls. at 1,603 feet; Dale Oil Corp.'s No. 10 Wilmot, 40 bbls. at 1,405 feet; Franklin and others' No. 5-B Parrish, 105 bbls. at 1,562 feet; Oil Investment Co.'s No. 7 fee, 65 bbls. at 1,191 feet; Panhandle and others' No. 4 Orton, 20 bbls. at 1,793 feet; Sanders and others' No. 1 Sprague, dry at 1,640 feet; Wolf & Son's No. 2 Chilson, dry at 1,816 feet; Burton and others' No. 1 Jeske, dry at 1,251 feet; Continental Oil Co.'s No. 10 Harmel, 35 bbls. at 1,241 feet; Davis-Hart Co.'s No. 5 Roach & Junker, 67 feet at 1,237 feet; Gwynn and others' No. 1-B Rogers, dry at 1,372 feet; Humble Oil & Refining Co.'s No. 7 Stampfli, dry at 1,376 feet; Major Petroleum Co.'s No. 3 Cowan, 100 bbls. at 1,084 feet; No. 3 Rogers, 5 bbls. water and 12 bbls. oil at 1,340 feet; Murchison and others' No. 18 Griffin, 37 bbls. at 1,304 feet No. 10-C Harmel, 30 bbls. at 1,280 feet; Nicholson and others' No. 1 Prideaux, 5 bbls. at 697 feet; Ray and others' No. 1 Farmer, dry at 1,414 feet; Shamrock Oil Co.'s No. 15-C Richardson, 125 bbls. at 1,305 feet; No. 16-C Richardson, 150 bbls. at 1,336 feet; Shaw and others' No. 7-B Hayter, dry at 1,350 feet; Sun Oil Co.'s No. 1 Jeske, dry at 1,486 feet; The Texas Co.'s No. 1 Baren, 70 bbls. at 1,095 feet; Texhoma Oil & Rfining Co.'s No. 12 Harbison, dry at 1,375 feet; United Central's No. 5 Rogers, 126 bbls. at 1,344 feet; White Brothers' No. 6 Kunkel, 270 bbls. at 1,158 feet; White Brothers' No. 7 Kunkel, 650 bbls. at 1,158 feet; Gulf Production Co.'s No. 10 Monohan, 235 bbls. at 1,276 feet; No. 11 Oil Investment Co., making 110 bbls. at 1,203 feet; No. 2-A Rogers, 130 bbls. at 1,330 feet; No. 2-B Rogers, dry at 1,410 feet.

Young County Completions

Burns and others' No. 1 fee, dry at 1,402 feet; Christie and others' No. 1 Rogers, dry at 1,302 feet; Gardner and others' No. 1 Schlegel, dry at 1,215 feet; Gulf Production Co.'s No. 6 Schlegel, dry at 1,397 feet; Mitcham and others' No. 1 Buster, dry at 1,108 feet; Muse and others' No. 2-A Schlegel, 35 bbls. at 1,193 feet; No. 3-A Schlegel, dry at 1,236 feet; No. 1-B Schlegel, dry at 1,208 feet; The Texas Co.'s No. 11 Gambrell, 400 bbls. at 1,217 feet; Welch and others' No. 1 Wilson, 12 bbls. at 1,108 feet; Wilson and others' No. 3 Haygood, 360 bbls. at 1,008 feet; Wurtz and others' No. 1 Wells, dry at 1,506 feet.

Stephens County Completions

Brown & Co.'s No. 2 Akin, 5 bbls. water and 5,000,000 feet of gas at 2,430 feet; Humble Oil & Refining Co.'s No. 2 Jones, dry at 4,005 feet; Simms Oil Co.'s No. 4 Decker, 80 bbls. at 2,174 feet; Sun Oil Co.'s No. 6 Stoker, 8 bbls. at 4,022 feet; Texas Fidelity Oil Corp.'s No. 8 Gardenshire, 15 bbls. at 2,110 feet; T. P. Coal & Oil Co.'s No. 2 Pierre, 10,000,000 feet of gas at 1,971 feet.

Eastland County Completions

McLester Oil Co.'s No. 1 Allen, dry at 3,420 feet; States Oil Corp.'s No. 15 Harrell, 24 bbls. at 1,915 feet; Ardisone and others' No. 9 Kincaid, dry at 3,370 feet.

Hutchinson County Completions

Dixon Oil Co.'s No. 1 Smith, 200 bbls. at 2,960 feet; Twin Six Oil Co.'s No. 1 Kingsland, 204 bbls. at 2,965 feet.

Carson County Completions

Crosbie Oil Co.'s No. 1 Burnett, 200 bbls. at 2,937 feet.

Gray County Completions

Wilson Oil & Gas Co.'s No. 1 Wilson, dry at 3,785 feet.

Montague County Completions

The Texas Co.'s No. 3-A Gist, dry at 1,947 feet; No. 1 Salmon, dry at 1,685 feet.

Throckmorton County Completions

Davis-Hart Co.'s No. 1 Rogers, dry at 1,502 feet; Murchison and others' No. 1 Williams, dry at 1,502 feet; McGee and others' No. 1 Martin, dry at 1,402 feet; Skinner and others' No. 1 Newton, dry at 1,702 feet.

Shackelford County Completions

Phillips Petroleum Co.'s No. 1 Jackson, 100 bbls. at 3,532 feet.

Palo Pinto County Completions

Moore and others' No. 2 Stuart, 15 bbls. at 1,675 feet.

Runnels County Completions

Russell Production Co.'s No. 2 Russell, dry at 3,450 feet.

Reagan County Completions

Big Lake Oil Co.'s No. 5 University, 1,970 bbls. at 2,987 feet; No. 21 University, 50,000,000 feet of gas at 2,440 feet; Simms Oil Co.'s No. 1 Sawyer, dry at 3,501 feet.

N. LOUISIANA-ARKANSAS

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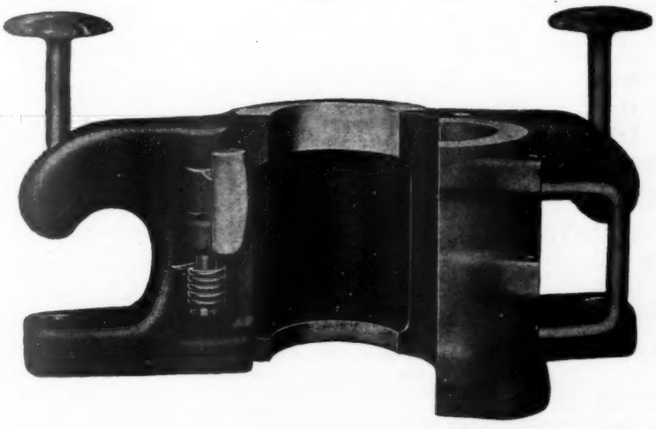

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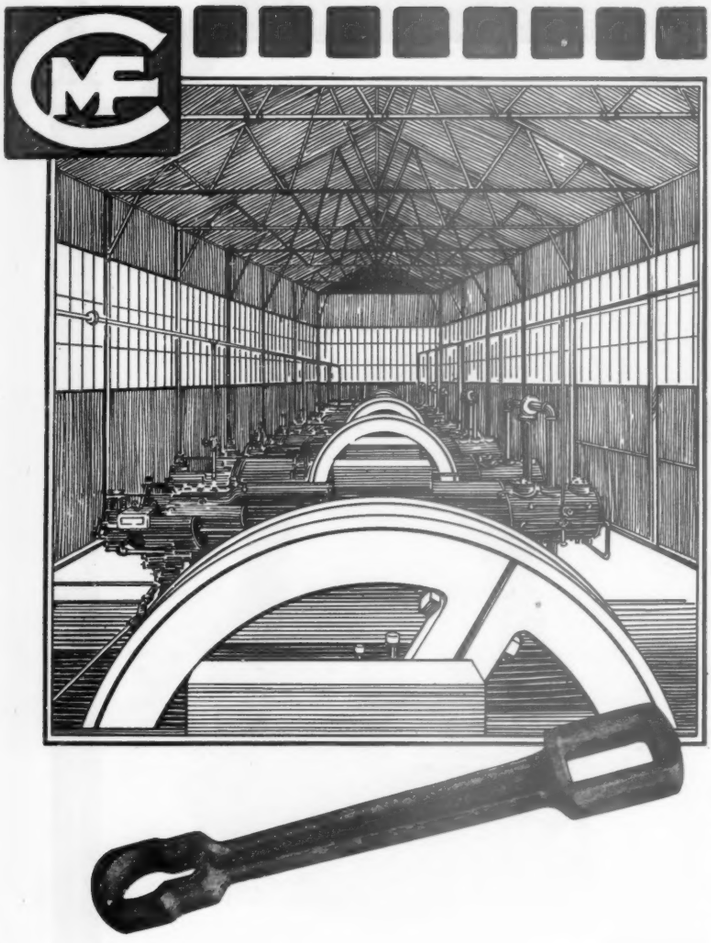

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N. LOUISIANA-ARKANSAS

(Continued from Page 40)

rick up for No. 4, Section 4-16-15; Marine Oil Co. set 10-inch casing at 490 feet in No. 4 Hays and 6-inch at 2,325 feet in No. 5, Section 4-16-15, and Penguin Oil Co. is whipstocking casing at 1,850 feet in No. 1 Umsted, Section 4-16-15.

The Shreveport Oil Corp.'s No. 2 Umsted, Section 4-16-15 is blowing 40,000,000 feet of dry gas at 2,345 feet and casing will be set in an effort to cut off the gas and drill deeper; No. 3 Umsted, same location, is down 150 feet; Sure Oil Co. is drilling at 600 feet in No. 1 Hill and made location for No. 2, Section 5-16-15, and Wingfield and others are drilling at 1,700 feet in No. 1 Umsted, rigging up to drill No. 2 and made location for No. 3, Section 4-16-15.

North and West

Farther north and in the west end of the Smackover Field in Ouachita County, Arkansas Fuel Oil Co. is rigging up to drill No. 4 Snyder, Section 34-15-15; H. E. Clarke is drilling at 150 feet in No. 2 Shirey, Section 36-15-17, and at 2,100 feet in No. 4 Smith, Section 26-15-17; Cumberland Petroleum Co. set 6-inch casing in No. 1 Elliott, Section 23-15-17, and No. 6 Reynolds, same section, is standing at 2,302 feet with 800 feet of oil in the hole and arranging to pump; Dashko and others are drilling at 1,200 feet in No. 2 Joyce, Section 34-15-15, and Eberhardt and others arranging to pump No. 1 Gibson, Section 27-15-17 at 2,347 feet.

The El Dorado Union Oil Co.'s No. 4 LaGrone, Section 36-15-17, has 700 feet of oil in the hole and arranging to pump at 2,272 feet; Forest Oil Co. is drilling at 350 feet in No. 1 Arnold, Section 26-15-16, and set 12½-inch casing at 40 feet in No. B-2 Lewis, same section, and arranging to pump No. 5 Minor, Section 29-15-16.

Guy Freeling is arranging to test 24 feet of sand at 2,335 feet in No. 3 Gibson, Section 26-15-17; Giles and others set 6⅝-inch casing at 1,868 feet in No. 2 Neeley, Section 26-15-16, and drilling at 2,058 feet; Gilliland Oil Co. is drilling at 1,500 feet in No. S-6 LaGrone, Section 36-15-17, and at 2,595 feet in No. B-5 Myar, Section 30-15-16; Gulf Refining Co. is arranging to set 6-inch casing at 2,372 feet in No. 3 R. Bennett, Section 33-15-15, and has a fishing job at 2,015 feet in No. 1 and cementing back to 1,775 feet; No. 1 Burkett, Section 7-15-16, is drilling at 2,950 feet; No. B-6 Goodwin, Section 32-15-15, tested salt water at 2,338 feet, drilled to 2,375 feet and setting 6-inch at 2,372 feet; No. 5 Reynolds, Section 23-15-17, tested in 16 feet of sandy shale at 2,336 and 2,364 feet and arranging to drill deeper, and No. A-14 Werner, Section 36-15-17, tested dry in 7 feet of sand at 2,390 feet, drilled to 2,397 feet, bailing in 14 feet of sand.

Hemphill and others set 10-inch casing at 60 feet in No. 1 Elliott, Section 14-15-17; Hickory Oil Co. is drilling at 1,100 feet in No. 2 Fincher, Section 32-15-16, and Home Refining Co. at 1,900 feet in No. 1 Berg, Section 27-15-17; Houston Oil Co. is coring in sandy shale at 2,400 feet in No. 10 B. T. Laney, Section 31-15-15; R. L. Hunt and others are drilling at 1,000 feet in Halton B-7, Section 26-15-17, drilling at 600 feet in No. A-3 Myatt, Section 22-15-17, have 400 feet of oil in the hole at 2,404 feet and arranging to pump No. A-7 Myatt, same section.

Invaders Oil Co. set 6⅝-inch casing at 1,911 feet in No. 2 Hardin, Section 22-15-16; D. N. Johnson has derrick up for No. 4 Farris, Section 34-15-15; W. R. Keever is drilling at 1,350 feet in No. 1 Neely, Section 27-15-16; Louisiana Oil Refining Corp. and others have started two wells on the Bland lease in Section 27-15-17, arranging to pump No. 1 Myatt, Section 22-15-17, standing 250 feet in oil in 87 feet of broken sand at 2,405 feet, and bailing to test 11 feet of sand at 2,334 feet in No. 2 Myatt, same section.

Magnolia's Operations

Magnolia Petroleum Co. is bailing to test at 2,300 feet in No. 2 Bettie Clawson and has derrick up for No. 3, Section 35-15-17; McCorkle and others are arranging to pump No. A-2 Smith, Section 25-15-17, at 2,307 feet; J. H. Meek drilling at 2,355 feet in No. 9 McKenzie, Section 36-15-16, and Miles and others are rigging up to drill No. 2 Neely in Section 26-15-16.

Murdock and others are arranging to pump No. 9 McKenzie, Section 22-15-17, at 2,328 feet; Pure Oil Co. set 8¼-inch casing at 1,985 feet in No. 2 Cunningham, Section 30-15-15; J. D. Reynolds is rigging up to drill No. 2 Berg, Section 13-15-17, and bailing at 2,300 feet in No. 5 Ward, Section 25-15-17.

The Sinclair Oil Co. is arranging to deepen No. 1 Berry, Section 33-15-15, formerly completed February 15, with an estimated production of 4,000 bbls. at 2,058 feet. Standard Oil Co. is drilling at 1,975 feet in No. 3 R. Bennett, Section 33-15-15, and at 2,310 feet in No. 1 George Powell, Section 34-15-15, set 10-inch at 304 feet in No. 7 Umsted, Section 32-15-15, taking core at 2,318 feet in No. 13 Umsted, Section 30-15-15, drilling in shale at 1,580 feet in No. 14 and in rock at 900 feet in No. 15 Umsted, Section 32-15-15.

Sure Oil Co. is rigging up to drill No. 2 Snyder, Section 34-15-15; Sutton and others set 6-inch at 2,240 feet in No. 8 Hughes, and trying to pull liner at 2,560 feet in No. 9, Section 28-15-16; The Texas Co. has two wells drilling on the Neely lease in Section 27-15-16, and bailing to test 40 feet of sand at 2,297 feet in No. 7 Reynolds, Section 23-15-17.

The Texas Pacific Coal & Oil Co. is drilling at 600 feet in No. 5 Laney, Section 31-15-15; Unity Petroleum Co. has 1,000 feet of fluid in the hole at 1,999 feet in No. 3 Berry, Section 33-15-15; Whittiken and others are drilling at 2,279 feet in No. 6 Anderson, Section 23-15-17 and O. F. Whittaker rigging up to drill No. 1 Berg, Section 27-15-17.

Stephens Field

C. W. Robinson has made a location for No. 1 Polk in Section 16-15-19, in the Stephens district, in Ouachita County.

Louisiana Operations

Cotton Valley District

Operations in the Cotton Valley district are confined almost entirely to about six of the old line companies, with but few scattered rigs running by independent operators.

The Crusader Oil Producing Co. has three wells nearly completed on the Hope Estate lease in Sections 24 and 25-21-10, which will be put to pumping in a few days. Fortuna Oil Co. is about ready to test No. 1 R. R. Cox, Section 15-21-10, and Humble Oil & Refining Co. has two wells ready to pump, one drilling and one derrick on the Bodcau Lumber Co. land in Section 28-21-10, and three rigs running on the Gray lease in Section 26-21-10.

Louisiana Oil Refining Corp. is drilling plug in 6-inch at 2,490 feet in No. 2 Bodcau, Section 13-21-10, has 1,500 feet of oil in the hole and is arranging to pump No. 3 Crichton, Section 21-21-10, at 2,538 feet; drilling in lime at 2,160 feet in No. 5 Gray and has derrick up for No. 6 in Section 28-21-10.

The Ohio Oil Co. has 1,500 feet of oil in the hole and arranging to pump No. 18 Bodcau, Section 13-21-10, at 2,500 feet; drilling in with cable tools at 2,530 feet in No. 20 Bodcau, Section 15-21-10; drilling in chalk rock at 2,015 feet in No. 26, Section 15-21-10, in gumbo at 1,215 feet in No. 28, Section 28-21-10, set 6⅝-inch at 2,520 feet in No. 29, Section 27-21-10, drilling in lime at 1,950 feet in No. 30, and has derrick up for No. 31 in Section 27-21-10; No. 2 Cox, Section 15-21-10, is setting liner to test four feet of sand at 2,543 feet; No. 4 Gray, Section 26-21-10, has 900 feet of oil in the hole at 2,555 feet and is arranging to pump, and in same section No. 5 Gray is drilling out 6-inch plug at 2,523 feet, No. 6 has set 6-inch at 2,534 feet, No. 7 is standing with 1,500 feet of oil in the hole and arranging to pump, No. 8 is drilling in shale at 1,650 feet and derricks are up for Nos. 9, 10 and 11.

Woodley Petroleum Co.'s No. 1 Gray, Section 26-21-10, is standing 1,000 feet in oil at 2,566 feet and arranging to pump

(Continued on Page 105)

The famous curled roller—with the fiber of the metal running around the roller, instead of across—made of special alloy steel, heat-treated. Its resilience cushions and absorbs the shocks.
Super-rugged sidebars are made of .40% Carbon Steel, specially heat-treated. Offset to guide more easily onto sprocket.
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Each of these is the result of Link-Belt's many years' practical experience in making super-service drilling chains. Each is partly responsible for the drilling records made with Link-Belt SS-40 Plus and SS-124 Plus Chains. But it's their *combination* in each chain that makes drillers pick SS-40 Plus and SS-124 Plus as the winners for their drilling races. Specify genuine Link-Belt Chains—and may the best crew win!

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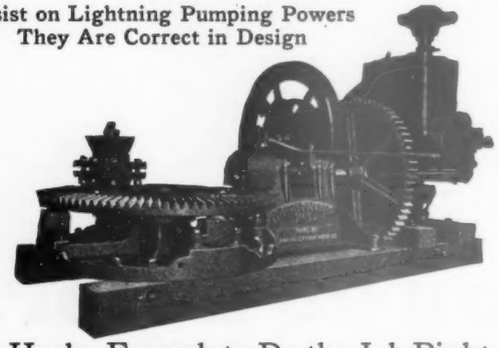

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In All Fields

CALIFORNIA FIELDS

(Contiuued from Page 44)

Chanslor-Canfield Midway Oil Co. is going ahead slowly at Delano with the Sentinel's old test on Section 20-25-27. The formation is a hard sand at 3,597 feet. The Standard has started work on two holes to test the recently acquired property on the McKittrick front. Well No. 1 is down 600 feet, while No. 2 is drilling ahead at 225 feet. Both are on Section 25-29-21. T. A. Piper has leased 80 acres of his property in the Poso Creek area, Section 11-27-28, to the Glide Oil Co. The latter takes over all of Piper's wells drilled to date and will drill several new holes. The Union is still in the blue shale at Rio Bravo and this test on Section 4-29-25 does not look any too encouraging at 5,594 feet.

The St. Helens is drilling steadily ahead on the Kern River Bluffs south of Bakersfield and shows 4,380 feet of hole in its wildcat in Section 14-29-28. The Main Oil Co. is nearing the 5,100-foot level at Wasco and reports from the field indicate that the company will continue drilling for another few hundred feet at least. The General Petroleum has taken over the Snowlene Oil Co.'s test on Jacalitos Dome near Coalinga and will carry it down for a deep test. The bit is at present going ahead at 4,278 feet. The Associated is building a steel rig on Section 14-15-18 at Raisin City as a result of the showings found by the Fresno Oil Co. in its wildcat at 5,320 feet and above. The Associated will also be wildcatting on Section 26-15-8 shortly, as the company has taken over the Fresno Petroleum's 3,500-foot hole which has been standing idle for some time because of financial difficulties.

The General Petroleum is making preparations to resume drilling in No. 1 Oschener in the Kettleman Hills at 6,275 feet, following a long delay occasioned by a fishing job. The present formation is a gray sand. The Marland is plugging its test on Section 12-22-17 to locate water, a shut off having not been effected on the 8¼-inch at 4,946 feet. E. J. Miley spudded in his well No. 1 on Red Mountain in Ventura County, Section 7-3-23, and is going ahead slowly in a boulder formation at 200 feet. No. 1 McFarland of the Oakridge Oil Co., Section 13-2-21, is still dry at 4,910 feet, the formation being a sandy blue shale. The Ring Oil Syndicate on South Mountain, Section 23-3-21, is still attempting to secure a shut off on the 6¼-inch at 3,770 feet and will recement again within the next week or so. Well No. 5 of the Brooks Oil Co. at Santa Maria, in Santa Barbara County, Section 35-9-32, started gassing during the early part of the week and, although an oil flow has not yet been secured, it is believed that it will supplant the gas output within a short time. The hole was finished at 2,920 feet, a little shallower than the usual completion depth. No. 3 Bradley of the General Petroleum is drilling ahead in a yellow clay at 1,600 feet. No. 15 Escolle of the Union has been carried down to 2,486 feet and it is reported that the company will land a string of 8¼-inch within the next week or 10 days.

Field Operations

Oil field operations reported to the State Oil and Gas Supervisor show 26 new wells started, as compared with 42 during the previous week, bringing the total for the current year to date to 329, as compared with 415 at the same date last year. Of the 26 notices to drill filed this week, 4 were for wells in the Rosecrans Field, 5 at Inglewood, 3 at Torrance, 1 each at Huntington and Whittier, 2 in Ventura County, 9 in the fields of Kern County and 1 in San Luis Obispo County. There were 30 tests for water shut off made, 4 more than during the preceding week. Deepening or redrilling jobs totaled 24, as compared with 22 during the period just preceding. Eleven abandonments were listed, bringing the total for the current year to date to 115. Permits were granted for the following new holes:

Torrance

Location, Company, Well—
C. C. M. O. Co.—
16-4-14 Del Amo 54.
16-4-14 Del Amo 48.
15-4-14 Torrance 74.

Rosecrans

Dominion Oil Co.—
7-3-13 Athens 1.
DeLendrecie Oil Well—
7-3-13 Athens 1.
7-3-13 George F. Getty, Inc.— Athens 2-A.
7-3-13 Henderson Pet. Corp.— Athens 2.

Inglewood

7-2-14 Mohawk Oil & Gas Synd. 3.
Shell Co.—
8-2-14 Rindge 1.
Petroleum Midway Co., Ltd.—
7-2-14 Smith 2.
Standard Oil Co.—
17-2-14 L. A. Investment 1-5.
17-2-14 L. A. Investment 1-6.

Huntington Beach

Standard Oil Co.—
4-6-11 Huntington B 33.

Whittier

23-2-11 Central Oil Co. of L. A. 75.

Ventura

Oak Ridge Oil Co.—
13-3-21 Yale Richardson 4.
Shell Co.—
28-3-23 Gosnell 15.

San Luis Obispo County

12-31-21 Lloyd Tevis 1.

Midway

32-31-24 Boston Pacific Oil Co. 7-C.
19-31-24 Pacific Oil Co. 7.
19-31-24 Pacific Oil Co. 5.
31-31-24 Pacific Oil Co. 71.

Elk Hills

14-30-22 Elk Hills Development Co. 2.
35-30-24 Pacific Oil Co. 75.
35-30-24 Pacific Oil Co. 83.

Kern County

21-30-21 Hitchcock & Cottle 1.

Kern River

Marland Oil Co.—
16-28-27 Cauley 14.

The following wells were abandoned:

Long Beach

19-4-12 Courtney Pet. Co. 3.

Torrance

C. C. M. O. Co.—
14-4-14 Kettler 2.
14-4-14 Kettler 5.

Huntington Beach

Standard Oil Co.—
14-6-11 Mills 1.

Santa Fe Springs

Shell Co.—
6-3-11 Slusher 2.

Los Angeles County

Shell Co.—
18-3-14 Fortuna 1.

Whittier

23-2-11 Central Oil Co. 72.

Los Angeles

Shell Co.—
11-5-12 Fred Bixby 1.

Midway

Midland Oilfields Co. Ltd.—
34-32-24 Thronber B-1.
6-32-24 Honolulu Cons. Oil Co. 35.

Tulare County

Holly Development Co.—
22-22-27 Murray 1.

KANSAS FIELDS

(Continued from Page 35)

CSL NW SE, Section 19-25-9, had sand at 2,394-2,456 feet, and is good for 130 bbls. after a 160-quart shot. Its No. 5 Hoffman, CSL SE NE SW, Section 30-25-9, is drilling at 1,600 feet.

Phillips Petroleum Co. is drilling No. 1, NW cor. Lot 14, Section 18-25-8, at 1,400 feet.

Rhodes and others have a new rig on the ground for No. 1 Kirk, NW cor. NW, Section 27-24-8.

C. Port Fleeger's No. 8, SE cor. SE, Section 19-25-5, is spudded.

Jameson and others' No. 1 Dixon, CEL SE SW, Section 18-28-9, is a failure at 3,945 feet.

Sedgwick County

Hartman and others have a failure in No. 1, NW cor. SE, Section 29-29-2, at a depth of 3,564 feet.

Marion County

The White Eagle Oil & Refining Co.'s No. 1 Warner, SE cor. SW SE, Section 8-21-4, is drilling at 875 feet.

Butler County

The Phillips Petroleum Co.'s No. 1 Paulson, SW cor. NW NW, Section 36-23-3, is drilling at 239 feet.

Its No. 3 Wilson, NW cor. SW, Section 31-23-4, is a new rig.

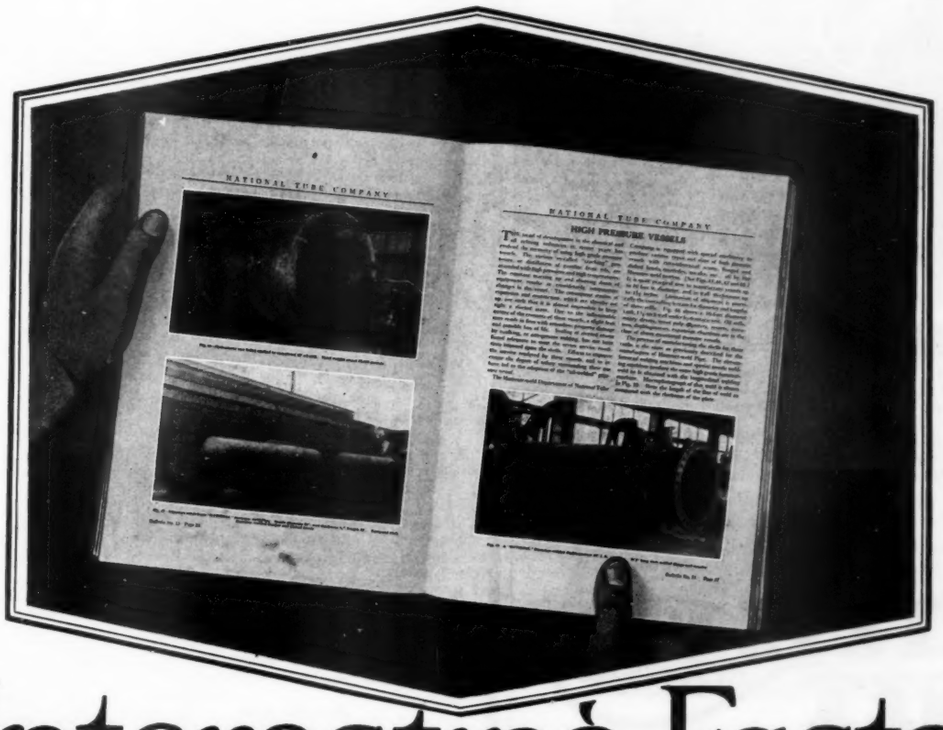
Chase County

The Phillips Petroleum Co. has a failure in No. 1 Erwin, NW cor. SW, Section 1-22-8; it is abandoned at 3,150 feet.

The Pure Oil Co. will shoot No. 5 Maxwell, SE cor. NE SW, Section 31-24-4, where a 25-bbl. show was encountered at 2,682 to 2,687 feet.

Vickers and others have a rig on the ground for No. 2 King, SW cor. NE SW, Section 17-24-4.

Roth Bert Oil Co.'s No. 8 Porter is completed and made 90 bbls. after a shot of 160 quarts. Sand was at 2,012-2,048 feet, and the location is CEL SE NW SW, Section 12-29-8. Its No. 9 Porter, CWL SW NE SW, Section 12-29-8, is drilling at 890 feet; and No. 3 Ralph Brothers, NW cor. SW, Section 13-29-8, is a rig. Denton and ohters' No. 4 Denton, NW cor. NE SW, Section 34-29-9



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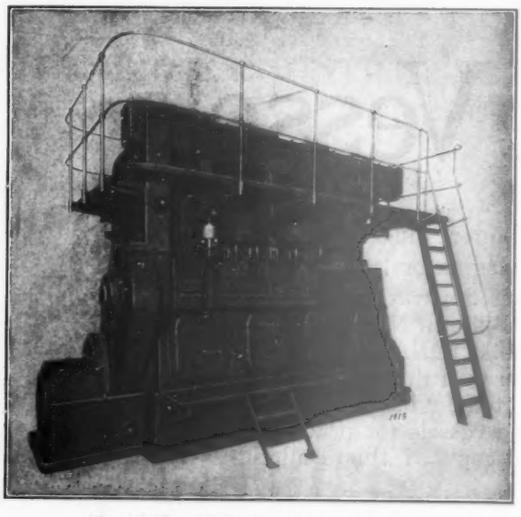

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is drilling at 900 feet. Bruce & Babcock's No. 1-A Barnhill, NW cor. NE, Section 12-27-7, is dry and abandoned at 2,880 feet.

Elk County

R. C. Gillespie's No. 1, NW cor. NW, Section 7-31-11, has been completed for a 2,000,000-foot gas well in sand at 1,085-1,105 feet. The Southwestern Gas Co.'s No. 1, C NE SE, Section 33-31-12, is dry and abandoned at 1,719 feet. The Pennok Oil Corp.'s No. 3 Pickel, SW cor. SW, Section 30-30-11, is dry and abandoned at 1,910 feet; the Pennok Oil Corp.'s No. 4 Pickel, NW cor. SW SW, Section 30-30-11, is drilling at 600 feet. The Southwestern Gas Co.'s No. 1 Whitner, CNL NW SW, Section 27-30-12, is dry at 1,600 feet. Triplett Oil Co. has a rig up for No. 1 Miller, SW cor. SE, Section 16-31-9.

Cowley County

Marland Refining Co. has completed a Wilcox well, No. 3 Wood, SE cor. NE, Section 9-33-3, a 550-bbl. well making 1 per cent water. Sand was found at 3,495-3,498 feet, and the big pay at 3,502-3,505 feet. Marland Refining Co.'s No. 6 Wood, NE cor. SE NE, Section 9-33-3, swabbed 113 bbls. from sand at 2,541-2,554 feet, and the well will be deepened to the Wilcox.

Roxana Petroleum Corp. has completed No. 3, NE cor. NW SW, Section 10-33-3, which swabbed 400 bbls. from sand at 3,502-3,510 feet. Its No. 2, SE cor. NW SE, Section 9-33-3, had 2,000,000 feet of gas from 3,122-3,125 feet. The 6-inch pipe will be pulled and the 8-inch reamed.

Marland Refining Co.'s No. 4 Bowers had 40 bbls. of oil and 4 bbls. of water in sand at 2,540 to 2,579 feet, and it will be drilled deeper. Marland Oil Co. has put in a rig for No. 5 Bowers, NW cor. SE NW, Section 10-33-3, and the Marland Refining Co. is rigging up No. 5 Wright, SW cor. NE NW, Section 10-33-3.

Winfield Pool

The White Eagle Oil & Refining Co.'s No. 2, NW cor. NE NW, Section 25-32-4, is dry and abandoned at 3,515 feet.

Dexter Pool

Torrance and others' No. 1-A, SW cor. NE NW, Section 24-33-6, had sand at 2,768-2,800 feet and is estimated at 5 to 8 bbls. after a 30-quart shot. It is shut down.

Arkansas Fuel Co.'s No. 1 Clark, NW cor. SW, Section 11-31-3, is dry and abandoned at 3,550 feet.

Foster Development Co.'s No. 1 McNabb, NE cor. SE, Section 35-31-4, is dry and abandoned at 3,500 feet.

Martin & Wilson have completed No. 4 Eastman, SW cor. NW SW, Section 5-31-6, with sand at 2,790-2,840 feet, good for 40 bbls. after a shot of 30 quarts.

Alcorn Oil Co.'s No. 1 Eddie, SW cor. NE NE, Section 21-31-6, is dry and abandoned at 3,423 feet.

Trees Oil Co.'s No. 2 Shaffer, SW cor. SE NE, Section 10-31-3, had sand at 3,007 to 3,031 feet, and is swabbing 60 bbls. after a shot of 30 quarts.

Roth & Mission's No. 1 Coffey, NW cor. SE NE, Section 30-31-5, had 8,000,000 feet of gas from 1,682 to 1,692 feet, and is being drilled deeper.

The well of the Wents Oil Corp., No. 1 Watts, C NE SE, Section 17-33-3, had 20,000,000 feet of gas from 3,168 to 3,178 feet, sprayed 20 bbls. oil from 3,178 to 3,188 feet, and was drilled in sand at 3,203 feet. The owners will tube and circulate water to wash the sand.

GULF COAST

(Continued from Page 48)

Co.'s No. 11 T. W. is drilling at 455 feet and No. 1 Wilson is around 3,300 feet.

At Damon Mound, Hamm & Co. have a pumper in No. 3 Bryan at 1,070 feet. The Southern Petroleum Co. has a location for a test on the Bryan.

Other Pools

At Spindletop, the Stella Oil Co.'s No. 8 McFaddin is a 20-bbl. well at 1,000 feet and the Unity Oil Co.'s No. 85 McFaddin is making 15 bbls. at 950 feet. The Wilson-Broach No. 47 Hoggins is pumping 10 bbls. at 850 feet. The Baker Oil Co.'s No. 1 Trembly is bailing at 955 feet. The Eddy Oil Co.'s No. 13 Trembly is drilling at 750 feet.

In the Saratoga Pool, the Weldon Oil Co.'s No. 2 Texas is pumping 15 bbls. at 1,500 feet and its No. 6 Bradley is making 25 bbls. at 1,600 feet. Both are work overs. In the new north side extension, the Gulf Production Co.'s No. 1 Wells is drilling around 1,434 feet and the Rio Bravo Oil Co.'s No. 1 Fountain is at 1,655 feet with No. 2 rigging. The Yount-Lee Oil Co.'s No. 1 Parrish is at 2,200 feet.

In the Batson Pool, the Acorn Oil Co.'s No. 5 Parffin is pumping five bbls. at 675 feet. The Ada Belle Oil Co.'s No. 93 Davis is bailing at 810 feet and in the deep sand section, the Kirby Petroleum Co.-Anderson & Munson's No. 2 Hodges is bailing at 2,950 feet. Strainer was set at 40 feet of broken formation. The Acorn Oil Co.'s No. 3 Brite is at 365 feet and Deutser Oil Co.'s No. 11 Trustee at 940 feet.

At Big Creek, the Gulf Production Co.'s No. 9 Wheat was abandoned at 1,700 feet. The same company's No. 18 Davis is at 3,310 feet; No. 10 at 3,100 feet and No. 20 at 3,980 feet. The Texas Co.'s No. 1 Lingua is at 4,100 feet.

At Pierce Junction, the Gulf Production Co.'s No. 2 Cain was abandoned in salt water at 4,025 feet. The Texas Exploration Co.'s No. 7 Dooley is at 3,300 feet and H. R. Cullen's No. 6 Howe is below 3,235 feet.

At Blue Ridge, The Texas Co.'s No. 12 Robinson has stopped flowing. It is on the northwest side of the dome. The Gulf Production Co.'s No. 8 Luscher is at 3,295 feet and No. 3 Invincible is at 2,675 feet.

At Markham, the Rycade Petroleum Corp.'s No. 2 Gray is deepening from 3,360 feet and Powers & McCarthy's No. 1 Cherry is at 910 feet.

At Barber Hill, S. J. Hindman's No. 1 Collier is below 2,830 feet.

Humble Pool

John Deering's No. 2 Bissonnett on the northwest side of the Humble Pool, is pumping and flowing 300 bbls. at 4,165 feet. It is 26 gravity oil, differing in that respect from No. 1, which was only about 14 gravity and was lost as a well. Bennett & Woods' No. 1 Charpiot is pumping 35 bbls. at 1,100 feet with No. 2 drilling. The Southern Petroleum Co.'s No. 43 Landslide is rigging.

South Louisiana Pools

In the Vinton Pool, the Seiss Syndicate's No. 5 Green is pumping 60 bbls. at 2,600 feet. Marrs McLean's No. 1 Gray is abandoned after fishing at 1,850 feet.

The Just Oil & Refining Co.'s No. 2 Weeks is shut down. The Vinton Petroleum Co.'s No. 15 Vincent is drilling around 2,825 feet; No. 13 Rescue, around 2,792 feet; No. 49 Cary, around 2,100 feet; the Edgerly Petroleum Co.'s No. 3 Vincent, around 3,455 feet; The Texas Co.'s No. 2 A. Gray, around 2,820 feet; the G. F. B. Oil Co.'s No. 8 Lucky Four Acres, around 1,525 feet; Wilson & Broach's No. 6 Parks, around 2,760 feet; the Gulf's No. 62 G. N. G., around 2,150 feet; No. 38 Vincent, around 2,250 feet; No. 35 Star Vincent, around 1,900 feet.

The Gulf Refining Co.'s No. 36 Jennings-Clement at Jennings is drilling around 1,625 feet. The Coastal Oil & Fuel Co.'s No. 81 Crowley is a location. The Foxman Oil Co.'s No. 1 Truschel is drilling around 2,425 feet. The General Production Co.'s No. 52 fee is rigging up to work over.

The Roxana Petroleum Corp.'s Hunter test at Edgerly is fishing at 4,670 feet. G. W. Gray's No. 11 Lillard tested salt water at 1,950 feet. The Gulf Refining Co.'s No. 32 Bright Penn is drilling around 3,200 feet.

Daily Average Production

The estimated daily average gross production for the week by districts is as follows:

District—	Gross Bbls.
Batson	1,505
Blue Ridge	1,590
Big Creek	615
Barber Hill	110
Dayton	40
Damon Mound	1,165
Edgerly (La.)	450
Goose Creek	8,920
Humble	6,970
Hull	28,575
Jennings (La.)	1,100
Markham	100
Orange	12,200

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Sour Lake	4,370
South Liberty	13,450
Vinton (La.)	5,830
Welsh-Anse La Bute (La.)	90
West Columbia	12,300
Lockport (La.)	260
Miscellaneous	140
Total	101,840
Southwest Fields—	
Luling	29,470
Laredo districts	4,110
Somerset	2,620
Calliham	330
Rockdale-Minerva	430
Jim Hogg County	5,400
Lockhart	2,750
Total	45,110
Grand total for week	146,950
Grand total last week	148,990
Decrease	2,040

The decrease in the Coastal region more than offset the increase in the Southwest Fields. As this report closes a well rated at 1,800 bbls. at Lockhart adds to the daily average there. A 2,000-bbl. completion in the Hull Pool will bring up the average for that district from the figures given above.

Coastal Wildcats

The following is the status of tests drilling around known saline domes in the Coastal Plains region: At Stratton Ridge, in Brazoria County, the Ridge Development Co.'s No. 16 Dannebaum is around 765 feet. The Bryan Production Co.'s No. 1 Chester at Bryan Heights is at 3,445 feet.

Harris County — At Hockley, The Texas Co.'s No. 1 Warren drilling around 3,200 feet and No. 3 Warren about 800 feet.

Galveston County — At High Island, Gulf Production Co.'s No. 2 Smith drilling below 3,235 feet. Sun Oil Co.'s No. 3 Dunham rigged.

Matagorda County — At Shepherd Mound, Marland Oil Co.'s No. 1 Murphy, drilling around 4,910 feet. Shepherd Mound Oil Co.'s No. 1 Hawkins, an offset, drilling at 1,350 feet.

Jefferson County—At Big Hill, Houston Oil Co.'s No. 1 Sun-Davis fishing at 1,600 feet. Same company's No. 10 Pipkin drilling around 2,200 feet.

Wharton County — At Boling Dome, Gulf Production Co.'s No. 3 Felder drilling at 3,945 feet. Same company's No. 1 Hackstedt drilling at 2,186 feet. The Texas Co.'s No. 1 Taylor rigging.

Tests drilling around some of the newer domes located by means of the siesmograph or torsional balance are: Brazoria County at Wisdom Dome, the Rycade Petroleum Co.'s No. 1 Nash fishing for casing at 2,900 feet. No. 2 Nash drilling below 4,700 feet.

Fort Bend County—At Moore Dome, Gulf Production Co.'s No. 4 Moore drilling at 550 feet. The Pathfinder Oil Co.'s No. 1 Pinkey, drilling below 1,125 feet.

Jefferson County — South of China, Paggi Brothers' No. 2 Wilson drilling at 955 feet. The Texas Co.'s No. 2 Neches rigging.

Harris County — Formation tests are drilling east of Green's Bayou. Locations for two tests have been made in the Little York district, north of Houston, and the seismograph is being used in the vicinity of Crosby, 20 miles east of Houston.

Liberty County—Formation tests are being made north of Dayton and west of Batson. The Texas Little Farms Co. is drilling No. 1 Hawley in Hardin County.

Other tests drilling in the South Texas area include the Humble Oil & Refining Co.'s No. 1-A Panderson in Waller County; the same company's No. 1-A Gray in Jasper County; the Houston Oil Co. is rigging No. 1 Rose, 7 miles west of Edna, and has a location for No. 2 Rose. The Jackson County Syndicate's No. 2 Drushell, the gas well that broke loose last week, has been choked off and is under control. The sand is around 2,200 feet and the pressure 1,080 pounds. The section west of Edna is a known gas area and the Houston Oil Co. is drilling for gas on the Rose land.

The Big Ridge Oil & Gas Co.'s No. 2 Eastham, 14 miles north of Huntsville, in Walker County, is drilling at 506 feet. This is also a gas area. In San Jacinto County, C. O. Fleming and others' No. 1 is around 400 feet.

The Republic Production Co.'s No. 1 Stark, north of Orange, is drilling below 700 feet, with surface casing set at 300 feet. Heine and others' No. 3 Henderson in the shallow sand section in Angelina County, is drilling. The sand is found around 700 feet and some small wells have been made in it.

Southwest Fields

What is known as the Lockhart Field, 6 miles northeast of the town of Lockhart, Caldwell County, and 20 miles from the Luling Field, has become a price factor and a fixture as a new producing territory. Late in the week the Marland Oil Co.-Cranfil and Reynolds' No. 1 Gomillion came in making at least 1,800 bbls., getting the sand at 1,275 feet. The Marland well extends the field one-half mile north and east from the discovery well. Both wells show 38 gravity. The Magnolia Petroleum Co. is laying an 8-inch line from the Luling Field to take care of the production. The oil will be pumped through to its refinery storage at Beaumont. The Grayburg Pipe Line Co. is also laying a small line to connect with its Luling-San Antonio line.

A quotation of $1.75 has been posted for the Lockhart crude. Luling crude is now quoted at $1.50 on a contract basis.

In the Rockdale-Minerva shallow sand section of Milam County, the Fogle Oil Co. is drilling No. 16 McClelland, the Roundtree Oil Co.'s No. 1 Fee, J. F. Brady No. 1; the Niehaus Oil Co.'s No. 2 Chambers.

The Humble Oil & Refining Co. has reached down to the border in its search for new territory. It has started No. 3 Kincaide ranch in Uvalde County and No. 24-A King ranch in Willacy County, the latter being a formation test.

NEW OIL COMPANIES ORGANIZED IN MARCH

There were 39 oil firms organized in the United States and incorporated under the laws of various States during March, with a total capitalization of $62,175,000, which compares with 19 incorporations the preceding month and 33 in January.

The investment in oil corporations over the respective periods follows:

1918	$2,134,547,000
1919	2,786,006,000
1920	3,786,814,000
1921	1,255,657,000
1922	1,157,972,000
1923	962,403,840
1924	787,081,000
1925—	
January	$49,720,000
February	45,607,000
March	62,175,000
Total	$157,502,000

The following table gives the names, States of incorporation and indicated investments of the companies formed last month:

Abilene-Cisco Oil Corp., Texas	$100,000
Anglo-Guatemala Pet. Corp., Del.	7,500,000
Albany Gasoline Distilling Co., Del.	1,125,000
Bokima Ice Co., Inc., N. Y.	150,000
Casey Refining Co., Del.	400,000
Cuban Oil Dev. Co., Del.	100,000
Continental Dev. & Reduction Corp., Del.	3,000,000
Coats & Lowell, Inc., Del.	100,000
East Coast Dev. Co., N. C.	100,000
Essex Oil Co., Inc., Mass.	550,000
Grubstake Investment Assn., Del.	100,000
Gopher Drilling Co., Del.	4,000,000
Herndon Oil Co., Del.	100,000
Heckethorn (A. E.) Oil Co., Okla.	2,000,000
Hudson Oil & Gas Co., Del.	15,000,000
Houston Pipe Line Co., Texas	1,500,000
International Oils, Ltd., Inc., Del	100,000
Kansas Gasoline Co., Del.	150,000
Leading Oil & Gas Co., W. Va.	5,000,000
Lockhart & Co., Del.	25,250,000
Monarch Royalty Corp., Del.	100,000
Mustang Pet. Co., The, Del.	100,000
Miller (H. C.) Oil Co., The, Ohio	750,000
Monarch Coal Corp., Del.	5,000,000
Mene Grande Oil Corp.	750,000
Nate Paris Co., Ark.	100,000
Ohio Gasoline Co., Del.	1,000,000
Oneida Pet. Co., Del.	100,000
Pexol Oil Burner Co., Del.	100,000
Silser Oil Co., N. C.	500,000
Stone Mountain Oil Co., Okla.	
Standard American-Rumanian Petroleum Explor. Co., Del.	500,000
Stango Distributors, Inc., Del.	100,000
South American Oil Co., Del.	5,000,000
Torchlight Oil Corp., Del.	100,000
Van Oil Co., Okla.	100,000
Washington State Oil & Gas Co., Del.	250,000
Wyoming Sheep, Oil & Mineral Co., Del.	100,000
Wilson Pet. Corp., Del.	5,000,000
Total	$63,176,000

N. LOUISIANA-ARKANSAS

(Continued from Page 94)

and No. 2 in same section is rigging up to drill.

In the Springhill district, north of Cotton Valley, the Simms Oil Co. set 6⅝-inch casing at 2,610 feet in No. 1 Burrell, Section 34-23-10, and Standard Oil Co., of Louisiana, set 6-inch at 2,595 feet in No. 1 Maynor, Section 34-23-10.

Fortuna Oil Co. is drilling at 810 feet in No. 1 Branton, Section 16-22-9, about half way between the Springhill gas field and the Homer oil field.

Bienville Parish

The Roxana Petroleum Corp. is drilling in shale at 3,495 feet in its deep test on the Bryan lease in Section 30-17-6, half way between Gibsland and Bienville.

Bossier Parish

P. R. Boger and others are testing four feet of sand at 1,115 feet in No. 2 Atkinson, Section 3-18-12, 8 miles northeast of Shreveport.

Bellevue Field, Bossier Parish

The Humble Oil & Refining Co. is bailing to test at 387 feet in No. 4 Roy, Bliss & Wetherbee, Section 14-19-11.

Osborne and others are bailing salt water with a show of oil at 508 feet in No. 1 McDade, Section 28-19-11.

G. W. Wetherbee tested salt water at 372 feet in Bliss & Wetherbee F-6, Section 23-19-11, and is rigging up to drill F-7, same section.

Caddo Parish

In the Hosston district, Dixie Oil Co. set 10-inch casing at 120 feet in No. 1 Jolley, Section 27-22-15.

In the Pine Island district Dixie Oil Co. is drilling out cement at 3,582 feet and will go deeper in Noel B-1, Section 24-21-15; No. 65 Robertshaw, Section 13-21-15, is drilling at 2,280 feet and No. 66, same section at 1,300 feet; Ohio Oil Co. tested dry at 1,600 feet in No. 16 E. K. Smith, Section 7-21-14, and is drilling deeper, and the Tholl Oil Co. is drilling at 1,645 feet in No. 1 Houston I. & B. Co., Section 14-21-15.

Fortuna Oil Co. tested dry at 2,218 feet in No. 14 Doan-Thigpen, Section 5-20-15, and arranging to drill deeper, drilling at 2,250 feet in No. 2 Levee Board, Section 8-20-15, both east of Oil City No. 1 Mitchell, Section 17-18-16, 4 miles west of Cross Lake, set 8-inch casing at 1,862 feet.

In the Caddo Lake district, Gulf Refining Co. is drilling in lime at 2,618 feet in No. 69 Ferry Lake, Section 14-20-16, and No. 222 Ferry Lake, Section 16-20-16, tested salt water at 2,286 feet and waiting orders. The Texas Co. is arranging to pump No. 10 Russell in Section 3-20-16..

Haynes Brothers have gone back into their test on the Louisiana Live Stock & Planting Co. lease in Section 8-19-16, and are moving on rotary rig to drill deeper. The well was formerly completed with cable tools at 2,336 feet, making a 12-bbl. pumper.

The Texas Co. set 8-inch casing at 915 feet in No. 1 Hutchinson, Section 15-15-12, in the south end of the Elm Grove district.

Woodley & Collins are down 1,190 feet in No. 1 McVea, Section 23-19-14, east of Cross Lake and 9 miles north of Shreveport.

In the south end of the parish, in the Waskom district, the Waterman Drilling & Development Co. has derrick up for No. 2 Hunting Club, in Section 8-17-16, and Flournoy Trustee is down 1,600 feet in No. 1 Simpson, Section 8-16-15, 8 miles northeast of Bethany.

Claiborne Parish

Block Oil & Gas Co. is bailing to test 12 feet of broken formation at 770 feet in No. 2 Aubry, Section 20-21-8, in the west end of the Homer Field.

Claiborne-Lincoln Syndicate is reaming to bottom of hole at 2,260 feet in No. 3 Fields, Section 22-19-5, half way between Ruston and Homer and 6 miles north of Arcadia.

Triangle Drilling Co. is coring at 2,005 feet in No. 1 J. H. Cox, Section 7-19-5, 12 miles southeast of Homer.

Woodley & Collins are drilling at 2,025 feet in No. 1 Oakes, Section 8-20-5, 9 miles southeast of Homer.

Fortuna Oil Co. is rigging up to drill No. 1 Alexandria, Section 32-12-15, 5 miles east of Logansport.

The Texas Co. is setting 4½-inch casing at 1,445 feet in No. 30 Christine, Section 6-12-11, in the old Naborton Field.

Grant Parish

The Finn Construction Co. has made a location for No. 3 Ball in Section 14-7-1, and Grant Parish Petroleum Co. is drilling at 925 feet in No. 1 Selmer Lumber Co., same section, between Colfax and Catahoula Lake.

Jackson Parish

The Big Chief Oil Co. is drilling at 600 feet in No. 1 J. H. Rhymes, Section 13-14-4w, a purely wildcat test, 18 miles north of Winnfield.

La Salle Parish

The Urania well is still closed in, pending settlement of litigation concerning the leases on which it was drilled, but a number of tests are being started on the strength of the showing for a 600-bbl. producer in the discovery well.

The Imperial Oil & Gas Co. has derrick up for No. 1 Urania in Section 10-10-2e, and Rowe and others for No. 1 Urania in Section 7-10-2e, the Rowe well offsetting the discovery well, and the Imperial, 3 miles northeast of it.

G. W. Zeigen and others set 10-inch casing at 80 feet in No. 1 Urania, Section 18-10-2e, offsetting the discovery well.

Interest is revived in the two tests which have been drilling for some time past, 5 miles north of the Urania well. The Bur Ban Oil Co. went back into No. 2 Urania in Section 21-11-2e, which had been closed down at 2,390 feet, drilled to 2,740 feet with no success and the test will probably be abandoned.

The Gulf Refining Co. is reaming Urania No. 1-A, Section 22-11-2e, to bottom of hole at 2,657 feet, and will try to go deeper.

Lincoln Parish

Gulf Refining Co. is rigging up to drill No. 1 Dudley in Section 4-18-4w, 2 miles north and a little east of Ruston.

Natchitoches Parish

R. O. Roy is drilling in chalk rock at 1,710 feet in No. 1 C. M. Durr, Section 27-10-10, 10 miles south of the Bull Bayou district.

Ouachita Parish

Dickson & Frue are drilling at 2,860 feet in No. 1 Goodwin, Section 24-18-2e, and the Palmer Corp. is drilling at 585 feet in No. 2 Potts, Section 12-19-4e.

L. M. Emlet, who had a good showing of oil at 2,516 feet in No. 5 Bowman-Hicks Lumber Co., Section 9-7-12, drilled 9 feet deeper and is arranging to test at 2,525 feet. His No. 4 in Section 8-7-12 is drilling at 1,675 feet.

Union Parish

Roxana Petroleum Corp. is drilling in rock at 864 feet in No. 1 Henderson-Bennett, Section 13-22-3w, 14 miles northwest of Farmerville and 8 miles south of the Arkansas line.

The Texas Co. is drilling in gas rock at 2,080 feet in No. 1 Jimmy, Section 9-20-4e, 15 miles north of Monroe.

The Thrift Oil Co. is drilling at 2,000 feet in No. 1 Smith-Russell, 3 miles east of The Texas Co. well.

Arkansas Wildcats—Columbia County

The Arkansas Fuel Oil Co. has started an interesting test on the Hardy lease in Section 1-19-22, 8 miles northwest of Haynesville Field and 10 miles southwest of Magnolia, in which they have set 10-inch casing at 69 feet.

Transcontinental Oil Co. is drilling at 1,600 feet in No. 1 McClurkin, Section 6-16-19, 10 miles south of Magnolia.

Wingfield & Mitchell are drilling in chalk rock at 1,830 feet in No. 1 Bodcau, Section 4-20-21.

Hempstead County

J. G. Wooten is drilling at 1,110 feet in No. 1 Clarke, Section 22-11-24, 10 miles west of Prescott.

Miller County

Dr. F. F. Nigh and others have drilled to 3,003 feet in No. 1 Thomas, Section 12-20-28, just north of the Caddo Parish line, without success and are arranging to abandon the test.

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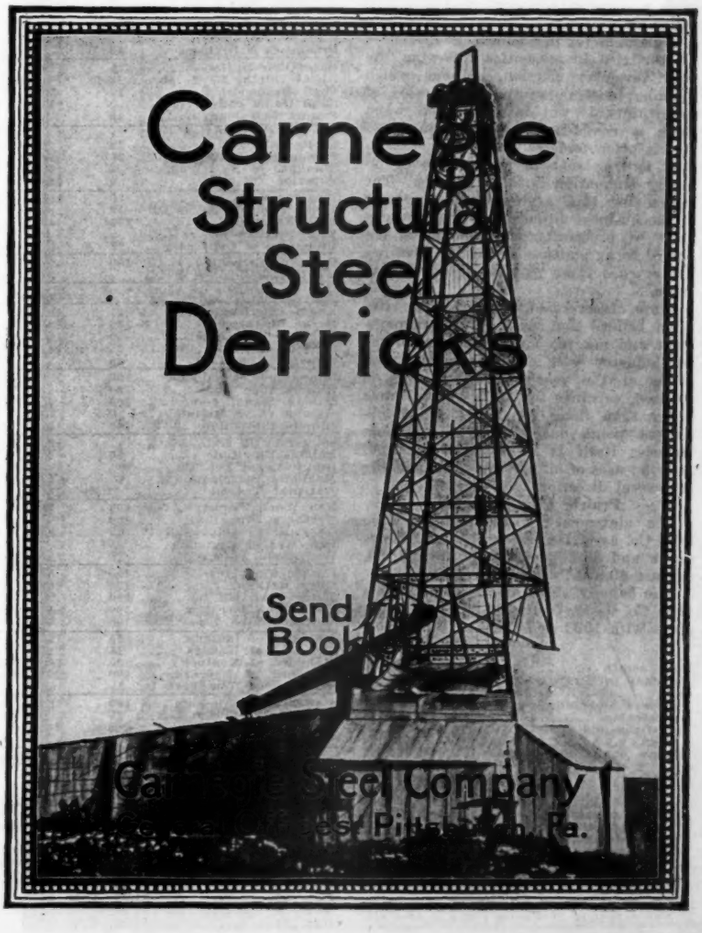

Oil Securities Are Firm But Inactive

Scattered Declines in Gasoline and Crude Prices Failed to Have Any Depressing Effect Because Already Discounted

By N. O. Fanning
Room 543, No. 30 Church St., New York

NEW YORK, April 13.—Oil stocks were firm but comparatively inactive during the past week. Scattered declines in gasoline and crude prices failed to have any depressing effect whatever as these were believed to have been discounted. The Pan-American Petroleum issues were active and were traded in within a narrow range averaging about 76. Anglo-American Oil pressed forward to a new high at 23⅞.

Year's Earnings Good

Nearly every report for 1924 so far published by the large independent and Standard Oil companies shows good earnings and a marked improvement over 1923. This is in line with predictions made in these columns.

The cause of the improvement in earnings in 1924 is easily apparent. The price of gasoline, fuel oil and crude averaged slightly better than in 1923, while the volume of business done by the larger units, at least, was greater.

The outlook for the oil industry this year is brighter than it was a year ago. Conditions within the industry have improved, but this is only one factor. The state of general business is vastly better than in 1924. There is no great national election of critical importance pending; with a sound administration, business is likely to have a square deal. Confidence is a great factor in business, as evidenced by the rise in securities following the last November election. Money which remains in bank vaults in a period of uncertainty is put in circulation when there is confidence; the importance of this is often underestimated.

It is true that in many lines of industry stagnation is still the rule. The reason for this, according to observers of the business situation, is that the element of prosperity and confidence imparted to agriculture and other lines has not reached these particular branches of trade.

Close observers of the petroleum situation believe that with careful management and not too much enthusiasm, the oil industry will close the year with prices at the year's peak. If this is realized, earnings for 1925 will be much better than those for 1924. These observers point out that the petroleum business itself is in a state of rapid growth; uses of oil are rapidly expanding in several directions.

Prairie Pipe Line Co.

The statement of the Prairie Pipe Line Co. as of December 31, 1924, shows profit and loss surplus of $15,225,799, against $9,876,431 the preceding year.

The balance sheet of the Prairie Pipe Line Co. as of December 31, 1924, compares with 1923 as follows:

Assets	1924	1923
Real estate	$196,930	$196,792
Personal property	1,706,387	1,115,758
Cash	24,336,582	24,638,381
Accounts and bills receivable	8,301,724	3,916,748
Pipe lines and stations	85,167,146	83,518,162
Liberty bonds, etc.	4,514,134	2,764,333
Total	$124,222,903	$116,150,174
Liabilities		
Capital stock	$1,000,000	$81,000,000
Accounts payable	2,059,938	2,279,945
Unadjusted credits	78,402	91,604
Accrued deprec.	23,687,577	20,145,935
Tax reserve	2,171,187	2,756,259
Surplus	15,225,799	9,876,431
Total	$124,222,903	$116,150,174

Union of California

Net earnings of Union Oil Co. of California in first quarter of 1925 were $2,550,000. These do not include any allowance for the substantial appreciation of inventory values resulting from the recent advances in crude oil and gasoline prices on the Pacific Coast, according to president W. L. Stewart. He reports capital expenditures for the quarter of $2,900,000, including labor and incidental cost of new drilling and cost of additional marketing station facilities.

Largely because of increased drilling expenditure the net for the quarter fell somewhat below $3,100,000 profits reported for the 1924 period. Before allowing for depreciation and depletion and cost of new drilling, the profits were $5,550,000, against $5,600,000 in the first quarter of 1924.

Production of crude oil by the Union Oil and controlled companies approximated 3,900,000 bbls., a decrease of 350,000 bbls. from the first quarter of 1924, Mr. Stewart states. Present production averages 45,000 bbls. daily. Increased output is anticipated from new wells in the Rosecrans district while drilling operations are being successfully developed in Fort Collins and Wellington districts, Colorado. Sales for the quarter were $17,300,000, a gain of $1,500,000.

Balance sheet of the company shows current assets equal to about 6½ times current liabilities. Cash resources were $12,200,000 of the total, which includes crude oil, fuel oil, unfinished oils and refined products in storage of about 24,000,000 bbls., valued at $1.13 a barrel against 23,470,000 bbls., valued at $1.12 a barrel, at December 31, 1924.

Standard Gas & Electric

Standard Gas & Electric Co. in the 12 months ended December 31, 1924, according to the annual report of President John J. O'Brien, showed an increase in gross earnings of 17.35 per cent, while the balance after all expenses, taxes and interest increased 27.99 per cent over the previous year. The balance available for common stock dividends was equal to $6.61 a share on the 302,693 shares outstanding December 31, 1924, there having been an increase of 90,693 shares during the year, due to the conversion of debenture bonds.

After payment of the regular dividends on the 7 per cent prior preference, 8 per cent preferred and 6 per cent non-cumulative stock, and $3 a share on the common stock there remained a balance for the year of $1,206,638.86.

The income account for 1924 compares with figures for the previous year as follows:

	1924	1923
Gross revenue	$6,098,532.39	$5,196,190.41
Net revenue	5,981,260.59	5,103,425.57
Interest charges	2,217,290.08	2,162,596.00
Balance	3,763,970.51	2,940,829.57
Preferred dividends	1,761,298.46	1,297,711.00
Balance	2,002,672.05	1,643,118.57
Common dividends	796,033.19	397,500.62
Balance	1,206,638.86	1,245,617.94

A new 4,000,000-foot daily capacity gas plant was constructed at Tacoma, Washington, and 5,000,000 feet additional daily gas manufacturing capacity added to the gas plant at San Diego, Cal.

Shaffer Oil & Refining Co. reports net operating earnings of $2,324,685 for 1924, an increase of 97 per cent over the previous year, the result of the generally improved situation affecting the oil industry during the year.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

Stocks—	Par	§Dividends Rate	Clos. Apr.13	Quot. Apr.6	1925 High	1925 Low	1924 High	1924 Low	1923 High	1923 Low
American Republics	..	..	*51	*48	66¼	48	48	25	..	..
Associated Oil	25	6	33	34⅜	39½	32	34⅝	27⅝	29¼	29½
Atlantic Ref. com	100	..	*103	106	117½	95¼	140½	78½	160	98⅜
Barnsdall "A"	25	..	22⅝	23⅞	28⅝	21	22¼	14	57	9⅞
California Pet. com.	25	7	30	31¼	32⅝	23⅞	29	19⅝	28½	17½
General Am. Tank	..	†3	48¼	48⅝	58½	45	53	35½	71⅝	40
General Petroleum	25	8	51½	51⅝	57½	42	46	38⅝	..	..
Houston Oil	100	..	64¼	64⅝	85	60⅝	82½	61	78	40⅜
Independent Oil & Gas	..	†1	24⅝	25⅝	33½	13½	16¼	6⅝	11¼	3⅞
Indian Refining	10	..	*7	*7	10⅝	5½	7	3⅝	8½	4
Louisiana Oil	50	..	16⅜	17¼	23⅜	14⅝	17	..	..	..
Maracaibo	..	..	26½	27⅝	35½	25½	37½	25⅜	28¼	16
Marland	..	..	36⅛	37⅛	46¼	32⅝	42	29	59⅝	18½
Mexican Seaboard	..	..	18⅝	15	22½	11½	25⅝	14⅛	19⅜	5⅜
Mid-Continent Pet.	..	..	27¼	29⅛	35⅜	26¼	40¼	22⅜	62¼	23⅜
National Supply	50	6	62¼	62¼	71	61⅜	72½	54	68	54
Pacific Oil	50	†2	55⅝	57½	65¼	52¼	58⅛	45	52⅛	31½
Pan American com.	20	12	75	76¼	82⅜	65	66	44⅛	93½	53
Phillips Petroleum	..	†2	39½	40½	46⅜	36¼	42½	28½	69⅝	19¾
Producers & Refiners	50	..	*23½	24½	32⅝	22	43½	29⅝	58¼	17½
Pure Oil com.	25	6	27	27½	33⅜	25½	30¼	20	32	16¼
Royal Dutch, N. Y. sh.	13.40	4.42½	56½	51	57⅝	48¼	59½	40⅝	55⅛	40½
Shell Transport	10	3.30	*40⅜	*44	45⅝	41	42	33	41¼	29½
Shell Union com.	..	†1	24⅛	24⅝	28⅝	22½	22½	15⅝	19¼	12⅜
Simms Petroleum	10	..	23	23⅞	26⅝	19½	24	10⅝	16⅝	6½
Sinclair Consolidated com.	..	..	19½	20⅜	24⅞	17	27½	15	39⅝	16
Skelly Oil	25	..	24½	26⅝	30½	21⅜	29	17¼	35	12½
Standard of California	25	8	58¼	60½	67¼	56⅜	68½	55½	64½	47½
Standard of N. J. com.	25	4	41¼	42½	47½	38⅜	42¼	33	44¼	30⅝
Superior Oil	6	..	4⅜	4⅜	6⅛	4	8½	2⅝	6⅜	2
The Texas Co.	25	12	44¼	44⅞	49	42⅜	45⅝	37⅜	52⅞	34⅝
Texas Pacific Coal & Oil	10	..	14⅜	15⅝	23⅜	11½	15¼	8¼	24⅜	5½
Tide Water Oil	100	4	*130	130½	152	122	151	116½	144	94
Transcontinental	..	..	4⅜	4⅛	5½	3⅞	6¼	3¾	14½	1¼
Union Oil of California	25	7.2	37⅜	38⅛	43⅝	36¼	39	35½	..	..
Union Tank com.	100	5	*122½	127	127⅝	118¼	132⅞	94	114	106
White Eagle Oil & Ref.	..	2¼	27½	26⅞	31⅝	25⅝	29⅜	23½	30⅜	20½
Standard Oil Stocks										
Anglo-American Oil	£1	25	23½	23⅝	23⅞	18	18⅜	14⅜	19¾	13½
Borne Scrymser	100	12	*202	*209	240	212	264	150	153	110
Buckeye Pipe Line	50	14	60½	62½	72	62	85½	51	94	57½
Chesebrough Mfg. Co.	25	14	*60	57⅝	70	48¼	52½	29¼	340	205
Crescent Pipe Line	25	..	*11	*11½	15⅝	12½	20	11½	25	15
Cumberland Pipe Line	100	12	145½	142	150	128	148	109	117	80
Eureka Pipe Line	100	8	78	80	96	80	105	74	117¼	87
Galena Signal com.	100	4	*55	*58½	68½	56⅜	69⅜	52⅜	78	55
Humble Oil & Refining	25	4.8	46¼	46¼	47⅜	42¼	43⅜	36	41	28¼
Illinois Pipe Line	100	12	143	*140	154½	127	161	123	171	115
Imperial Oil, Ltd.	..	†2	28⅛	29½	34⅛	27⅝	119	99	123	92
Indiana Pipe Line	50	8	72	74	84	70	100	66	103	81
International Pet. Co.	100	x50	23⅞	24⅛	28⅝	22¼	24⅝	16⅝	24⅝	13¼
Magnolia Petroleum Co.	100	4.5	133	139	159	121½	162	124	166	123
National Transit	12.50	16	22	*21⅜	25½	22⅜	25⅞	20⅝	29	19½
New York Transit	100	3	64¼	*65	79	64½	97	54½	138	70
Northern Pipe Line	100	6	*83	84½	88	80	107½	72	111	96
Ohio Oil Co.	25	8	64	66½	75¼	62¼	79½	53	85⅝	48⅜
Pen.-Mex. Fuel	25	..	*39	*37	44	35⅜	45⅝	27	45	10½
Prairie Oil & Gas	25	†2	52⅜	56	65½	50¼	269	193	272	152
Prairie Pipe Line	100	8	116	117	126	106	111	100	117	93
Solar Refining Co.	100	15	218	*220	259	200	240	170	212	161
South Penn Oil	100	..	166	168	197	139	176	117	196	100
South West Pa. Line	100	4	*67	*67	84	65	89	68	89	66
Southern Pipe Line	100	4	*81	*84	103	83½	100	80½	116	87
Standard of Indiana	25	10	61⅞	64½	70	59½	69⅜	54¼	69⅜	48½
Standard of Kansas	25	..	31	33	46	21	50½	32½	56¼	36½
Standard of Kentucky	25	16	*115	115⅞	124½	114⅜	121⅛	101	109½	76
Standard of Nebraska	100	20	*247	*249	270	244	262	198	280	186
Standard of New York	25	5.6	41⅜	42	48⅝	41½	48	37⅜	49⅜	35½
Standard of Ohio com.	100	10	345	*348	369	338	337½	277	320	270
Swan & Finch com.	25	..	*17½	18	27	16	28	20	..	..
Vacuum Oil	25	†3.75	87¼	88⅜	96¼	80½	83¼	56½	55½	40
Warhington Oil	10	..	*30	*30	30½	30	29	25	28	20¼
Miscellaneous Stocks										
Cities Service bks. sh.	..	‡	18¼	18½	21	17	19	13¼	18½	12¾
Continental	10	10	23⅜	24⅝	31⅛	21⅜	..	..	..	..
Gulf Oil Corp. of Pa.	25	6	64½	65	71	63½	67⅜	56	68¼	45⅜

*Bid, no sales. †In dollars. ‡Six per cent cash and 6 per cent scrip annually. §The figures in this column are kept up to date as far as possible, but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

April 13	53.49	Mar. 9	57.73	Feb. 2	59.24
April 6	54.63	Mar. 2	59.56	Jan. 26	56.09
Mar. 30	51.38	Feb. 23	58.02	Jan. 19	54.58
Mar. 23	52.90	Feb. 16	55.96	Jan. 12	55.28
Mar. 16	54.14	Feb. 9	58.39	Jan. 5	53.01

NORTH TEXAS MARKET SHOWING NO ACTIVITY

FORT WORTH, Texas, April 13.—North Texas refiners and marketers are completely upset over the condition of the refined oil market. They find themselves wondering what, if anything, can be done to bolster up the market on gasoline, kerosene, fuel oil and other refined products. The market as it stands now is showing practically no activity at all, and there were few inquiries the past week and practically no orders.

Refiners are talking freely of curtailing their runs at plants to probably half capacity, in the hope this will have a tendency to strengthen the market.

Late quotations on United States Motor oil were 9¾ cents. Very little was moving at this price and there was no assurance should it be offered at less, it would find a buyer. Export gasoline was practically dead on the market. A price of 11½ to 11æ cents was quoted on 64-66, 390 end point, while 64-66, 375 was being quoted at 12 cents to 12¼ cents with nothing of consequence moving.

The market on kerosene was also a very draggy affair with no demand in evidence. A price of 4 cents was made on 41-43 kerosene, while 42-44 was being quoted at 4⅛ cents.

Natural gasoline was slow with a range of about 1 cent between the various grades. Grade A is quoted at 9 cents, grade B at 8 cents and grade C at 7 cents.

Gas oil showed no more strength than any other commodity. It was being quoted freely at 3 cents to 3⅛ cents. Fuel oil also showed further declines during the week. Fuel could be bought North Texas in any reasonable quantities at $1.10 per barrel, while at Burkburnett it could be bought at $1.15.

PAWNEE INDIANS HAVE VISIONS OF EMULATING THEIR RICH BROTHERS

As the golden brush of nature touched the bleak foothills of northern Pawnee County, waking them from their long winter slumber, and garbing them in the verdant glory of springtime, the bit of the Bement Oil Co. touching an oil-bearing sand having indications of rich productive possibilities, brought to the weary Pawnee Indians a message of newly aroused hopes regarding the mineral properties of their lands.

For long, tiresome, soul-trying years, the eyes of the Pawnees have turned toward the line where the Arkansas River trickling between its sandy banks marked the border between their lands and the lands of their red brothers, the Osages—the richest nation in the world.

As pool after pool in the phenominally productive Osage country permitted the members of that fortunate tribe to bask in the sunlight of prosperity, the humble Pawnees were struggling to produce a meager living from the limited opportunities of the northern Pawnee County soil, Time after time they were disillusioned, and their dreams shattered by the fatal sentence so familiar to oildom, "Dry and abandoned."

When by one of the whimsicalities of fortune, the drill on April 9 encountered the sand at the unexpected depth of 2,762 feet, the hopes of the Pawnees were revived, and the unshaken faith in the petroleum prospects of their lands at last found some measure of justification.

While the new well is still in the speculative stages, and the entirety of the tale will be unfolded only by the bit as it digs its pathway through the sand, golden dreams are generated; dreams of expensive motor cars, of spacious dwelling places, of extensive wardrobes rivalling in color schemes the famous coat of Joseph. Thoughts of a wealth beyond the dreams of avarice are born, and with hushed breaths, and violently beating hearts, the Indians in the vicinity of the well will, temporarily at least, dwell in the land of romanticism.

MEXICAN FIELDS

(Continued from Page 46)

showing at 1,605 feet; No. 164 is in white lime at 2,095 feet; No. 167 is in gray lime at 1,925 feet; Nos. 169 and 170 cemented 8-inch at 1,200 feet in the San Felipe respectively; No. 172 is going to cement at 1,201 feet in the San Felipe; No. 173 is rigging; No. 174 is drilling in gray shale at 840 feet. Mexican Sinclair Petroleum Corp.'s No. 99, Lot 2, is in the San Felipe at 1,520 feet; No. 109, Lot 1, cemented 10-inch in the San Felipe at 1,245 feet; No. 112, same lot, is in lime at 2,220 feet. Mexican Petroleum Co.'s No. 21, Lot 1 Cacalilao, is in blue shale and shells at 1,100 feet. Transcontinental Petroleum Co.'s operations in Lot 4 follow: No. 140 is in lime at 2,220 feet; Nos. 158 and 165 are in the San Felipe at 1,575 and 1,755 feet, respectively; Nos. 176 and 177 are in shale at 75 and 550 feet, respectively, and No. 178 is in gray shale at 850 feet. In Lot 5, Nos. 156 and 161 are in lime at 1,975 and 2,230 feet respectively. In the Paciencia, just north of Cacalilao, No. 26 is at 125 feet; and Nos. 28 and 30 are in shales.

In the older sectors of the Panuco Field drilling operations are as follows: La Corona Petroleum Co.'s No. 96 Ojital is in shell at 990 feet; Nos. 97 Salvasuchi and 98 Ojital are rigging. Consolidated Oil Fields of Mexico has derricks up for two tests in Lot 6 Camolote. Island Oil & Transport Corp., is rigging for No. 2, Lot 12 W. Maguabes. East Coast Oil Co.'s No. 20 Laguna de la Milpa is preparing to cement 8-inch at 1,320 feet in gray shale; No. 28, same, is in sand and gravel at 125 feet; No. 447 Ingenio is cementing 8-inch in gray lime at 1,250 feet. English Oil Co.'s No. 10 Rufino is in white lime and green shale at 1,995 feet. International Petroleum Co.'s No. 92 Piedras is rigging. Mexican Sinclair Petroleum Co.'s No. 7 Tananturo is in pink shale at 1,540 feet. New England Fuel Oil Co.'s No. 5, Lot 3 Cacalilao, cemented 8-inch in shell at 1,130 feet; and No. 10, Lot 3, is in hard shale at 620 feet. Palmer & Payne's No. 1, Lot 3 Tamismolon, are drilling in hard shale at something over 1,000 feet. Tampascos' Oil Co.'s No. 3 Barragan is cementing 8-inch in shell at 1,008 feet. Schlaet & Co.'s No. 2-A Vega de Otate is rigging. The Texas Co.'s No. 9 Cicero is in gray shale at 930 feet. Thomas and others' Nos. 22 and 23, Lot 12 West Maguabes, are rigged and waiting permits.

In the south fields, Huasteca Petroleum Co. (Mexican Petroleum) No. 56 Cerro Azul is in gray lime with pyrities of iron at 2,365 feet; No. 58 is in brown shale at 1,799 feet; No. 59 is in gray shale and shells at 1,430 feet. Down in Tierra Blanca its No. 37 is in brown shale at 590 feet; and Nos. 41 and 45 are in the same formation at 1,390 and 400 feet, respectively. In Tres Hermanos its No. 7 is rigging standard at 4,061 feet in a limestone. Mexican Sinclair Petroleum Corp.'s No. 4 San Isidro is cementing 10-inch in a hard blue shale at 1,836 feet. Mexican Eagle Oil Co.'s No. 24, Lot 132 Amatlan, (the "deep test), is drilling in the Tamasopa at 5,051 feet; its No. 6, Lot 161 Chinampa, is in shale and shell at 1,725 feet; No. 2 Mecapepec cemented 8-inch at 2,932 feet in shale and shells. Transcontinental Petroleum Co.'s No. 3, Lot 198 Amatlan, is in salt 40 feet at 140 feet. Pantepec Petroleum Co.'s No. 14, Lot 114 Chinampa, cemented 6-inch in hard gray shale at 1,850 feet.

Corcovado

In the Corcovado sector of the northern fields drilling operations follow: Cosmos Oil Co.'s operations in Lot G: No. 7 is fishing at 1,990 feet; No. 8 is in gray shale at 1,015 feet; No. 14 is in brown lime at 2,000 feet; No. 15 is in blue shale at 800 feet; No. 20 cemented 8-inch in gray lime at 1,100 feet; No. 28 is in gray shale at 200 feet; No. 29 cemented 8-inch in gray lime at 1,210 feet; and the status of the other tests in this list remains unchanged since the last report. La Corona Petroleum Co.'s No. 8, Lot 6 cemented 8-inch in the San Felipe at 1,200 feet, and Nos. 9 and 10 there are rigging. In Lot 11 it is rigging Nos. 6 and 7. International Petroleum Co.'s No. 6, Lot 6 is in gray lime at 1,960 feet. Mexican Sinclair Petroleum Corp.'s No. 2, Lot 1, is in lime at 1,947 feet, showing around 1,000 bbls.; and Nos. 3, 5 and 7 are rigging. Mexican Gulf Oil Co.'s Nos. 21 and 22, Lot 4, are in white and brown lime at 2,132 and 2,215 feet, respectively; No. 23 is in the San Felipe at 1,508 feet; No. 25 is in shale at 288 feet; No. 26 is in shell at 930 feet; No. 27 is in shale at 165 feet. Transcontinental Petroleum Co.'s No. 1, Lot 6, is in gray asphalt at 1,080 feet; No. 2, same, cemented 10-inch in gray shale at 600 feet.

At Ebano, Mexican Petroleum Co.'s No. 10 Chapacao, cemented 8-inch in gray lime at 1,208 feet; No. 23 is in blue shale at 475 feet; and Nos. 26, 31 and 35 are rigging. Its No. 5-A Mendez cemented 8-inch at 1,260 feet in lime; No. 5 San Pedro is in blue shale at 1,000 feet, and No. 6 there is rigging. Number 30 Chijol is drilling in gray shale at 445 feet.

At El Barco, Mexican Gulf Oil Co.'s No. 68 is in white and brown lime at 2,025 feet; No. 69 is in gray lime at 1,385 feet, and No. 70 is in shale at a nominal depth. Kern Mex Oil Fields' No. 10, there, has cemented 8-inch in lime shells at 1,428 feet.

In the Marland Field, Cia. Pet. Franco Espanola, No. 23 Limon is in slate and lime at 1,525 feet; No. 25 is in lime at 1,920 feet.

In the Topila Field, Mexican Oil Co.'s No. 5, Lot 19, Tamboyoche, will cement 6-inch in hard shell at 1,925 feet.

Insurance Against Shut Downs——

A well lubricated engine, pump or drilling unit seldom breaks down. Oil at the right time and in the right place is the best possible insurance against the breakdown of drilling and pumping units.

Loss of time, the result of avoidable shut downs has cost and is costing the oil industry thousands of dollars.

Dependable lubrication by insuring more continuous operation of drilling and pumping units will prevent much of this loss.

A McCord force feed lubricator supplies dependable constant lubrication. A McCord lubricator starts with the engine and forces fresh, live oil to all working parts as long as the engine operates. The result is fewer shut downs and more continuous operation.

Insure your drilling and pumping units against shut downs by installing McCord force feed lubricators today. Order them from the National Supply Co.

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REFINING AND MARKETING

ROCKY MOUNTAIN AREA FUEL OIL SHORTAGE

CASPER, Wyo., April 3.—Shortage of fuel oil in the Rocky Mountain region may force railroads to change back to coal within a few months, according to rumors here.

The Chicago and Northwestern railroad is one system considering changing back to coal unless there is more fuel oil available. This company in 1924 consumed an average of 4,200 bbls. daily. Its supply is obtained from the Midwest Refining Co., the White Eagle Oil & Refining Co. and the refineries of the Standard and Mutual Oil companies at Glenrock.

The Burlington and Great Northern railroads are other systems burning Rocky Mountain fuel oil. The Burlington gets its supply from the Casper and Greybull refineries while The Texas Co. supplies the Great Northern railroad from its Casper plant.

Some relief for the shortage of fuel oil here may be given if the Union Oil Co. of California lays its pipe line from Maverick Springs to Shoshoni. The line, which may be laid this summer, will afford an outlet for the black oil production of Maverick Springs. There also are possibilities of additional supply through more intensive development in the black oil districts of Lander and Thermopolis.

MOTOR BUS ADOPTED BY KANSAS CITY LINE

KANSAS CITY, Mo., April 13.—Another step in the trend to a greater utilization of petroleum and its products was taken here with the granting of a franchise to the receivers of the Kansas City Railways Co. to operate a bus line system to start with 63 buses. The receivers have 60 days in which to accept or reject the franchise.

Establishment of bus service in Kansas City is taken to mean that gasoline is growing in favor in the transportation world as the most practical and economical means of power.

The proposed franchise would authorize the receivers of the street railway company to operate at least 15-minute bus service on nine lines in the city. The franchise is for three years. Both single and double deck buses will be used.

WORK TO BE STARTED ON SHELBY REFINERY

SHELBY, Mont., April 14.—Work is to be started at once by the Shelby Pipeline & Refining Co., on the first unit of its new plant at Shelby. The unit will have a capacity of 1,000 bbls. and will cost $165,000. The company also will lay a pipe line from the Sunburst Field. J. A. Wrather of Texas, is at Shelby to oversee this project.

The Shelby company was incorporated only recently for $350,000. The incorporators are Montana and Washington men.

LUBAC RECEIVER APPOINTED

CHICAGO, April 14. — The Lubac Corp., of Chicago, manufacturer of an anti-carbon knock compound to be added to gasoline, has been placed in the hands of a receiver, Monte H. Sadler, 231 S. La Salle Street. Unsecured liabilities outside of claims of officers and stock holders amount to $25,000.

MOVE CHICAGO OFFICES

CHICAGO, April 14.—To provide more adequate quarters, Wenger & Co., a Chicago petroleum marketing firm, has moved its offices from the Rand-McNally building to 624 S. Michigan Avenue.

CAWARDS ANNOUNCE MERGER

WATERLOO, Iowa, April 13.—Merger of the Hawkeye Tank Line Co. of Waterloo and the Black Hawk Oil Co., of Cedar Falls, has been announced by their owners, the Caward interests. The Cawards recently sold their holdings in the Hawkeye Oil Co. to the Producers & Refiners Corp., which declined to exercise its option on the Hawkeye Tank Line Co. Officers of the company are: A. H. Caward, president; Walter B. Caward, vice president; H. C. Wurster, secretary; H. S. Caward, treasurer and J. E. Dettmer, sales manager.

EQUALIZE OIL RATE TO TEXARKANA, TEXAS

AUSTIN, Texas, April 11.—As a result of a conference of traffic representatives with the railroad commission, it has been agreed that rates on petroleum products to Texarkana, Texas, from north Texas producing and refining points should be reduced to a level with those in effect to Texarkana, Ark. Equalizing of the Texarkana rates on oil is solving a long standing Texas traffic problem.

Under authority of the Interstate Commerce Commission a 25 cent rate is applicable from north Texas refinery points to Texarkana, Ark., to meet competition from Arkansas refining ponits. The rate from the same north Texas refining points to Texarkana, Texas, is 39½ cents, or a disadvantage of 14½ cents against Texas refiners.

The railroad voluntarily agreed to apply the same 25 cent rate to Texarkana, Texas, from Texas refining points provided the rates to intermediate points shall not be affected. The commission will thus approve the 25 cent rate and equalize the Texas refineries.

CONTRACTS COMPLETED BY PHILLIPS PETROLEUM

NEW YORK, April 11.—The Phillips Petroleum Co. has completed contracts with various companies for delivery over the next 12 months of 12,000 cars of natural gasoline. This aggregates more than 90,000,000 gallons. Phillips production is running at the rate of about 115,000,000 gallons a year. The firm's contracts for sale of this amount of gasoline leaves a comparatively small amount available for Phillips to distribute among its daily spot market customers. It is understood the contracts made are with about 25 leading refinery and marketers of the United States and Canada.

Phillips is producing approximately 30,000 bbls. of crude oil daily, all of which is being sold. In addition to this, 15,000 to 20,000 bbls. is being sold daily from storage at more than $1 a barrel above the price which prevailed around the first of the year.

NEW WEWOKA PLANT

WEWOKA, Okla., April 14.—Construction of the new gasoline plant of the Magnolia Petroleum Co. in the northwest corner of 32-8-8, 1½ miles south of Wewoka is nearing completion. The company expects to have the plant in operation by May 1. The plant, which will have five units, will have a capacity of 8,000,000 feet of gas daily. It will produce 10,000 gallons of gasoline daily.

INSTALL CROSS UNITS

Installation of the Cross cracking process in two more refineries has been announced by the Gasoline Products Co. of Kansas City, Mo. At the Magnolia Petroleum Co. plant at Beaumont, Texas, 10 units have been installed, while the Vacuum Oil Co., at Olean, N. Y., has put in one unit.

MARINE OIL PURCHASES SIERRA REFINING CO.

LOS ANGELES, Calif., April 11.—Marine Oil Corp., has purchased the controlling interest in the Sierra Refining Co. This action follows the purchase several months ago by the Marine Corp., of a large block of stock in the Continental Petroleum Corp., of Nevada, which before had owned the Sierra Refining Co. In making the latter transaction the Marine used 203,000 shares of its treasury stock.

The Sierra Refining Co. operates a complete refining plant, having 10,000 bbls. daily capacity, at Vernon, Calif. At present the plant is running only 5,000 bbls. daily. An additional unit is under construction which will increase the capacity of the plant from 10,000 to 12,000 bbls. daily.

With the purchase of the actual control of Sierra by Marine it is expected that the purposes of Continental—that of a holding corporation—will no longer be required. In addition to ratifying the purchase of the Sjerra the board of directors of Marine declared a regular monthly dividend of 1 per cent payable on April 30 to stockholders of record of April 20. An extra dividend of 1 per cent was also declared.

Earle Derby, a member of the directorate of the Pacific Oil Co., president of Continental, and C. W. Durbrow, an attorney for the Southern Pacific railroad, a member of the board of directors of the Continental, were elected directors of the Marine.

A contract was made, it is reported, between Marine and Sierra for a period of ten years for all future production of Marine and for the present production as soon as existing contracts on the present production expire. Sierra is also said to have made a contract with the Pacific Oil Co. for the disposal of all of its fuel oil by the latter organization.

A. J. VAUGHAN FORMS OIL JOBBING COMPANY

MUSKOGEE, Okla., April 11.—A. J. Vaughan, sales manager and head of the accounting department of Waite Phillips Co., has organized a new jobbing firm, the Vaughan Oil Co., which will start business in Muskogee the first of May. Mr. Vaughan has resigned from the Waite Phillips Co. effective May 1.

Construction of the warehouse and tanks of the Vaughan company will begin in a few days. The building will be on a lot adjoining the Pure Oil Co. A fielling station will be installed at the warehouse and other stations will be erected later.

The Vaughan company will handle the Pure Oil Co. products. Mr. Vaughan formerly was employed by the Pure Oil Co. when it was the Oklahoma Producers & Refiners Co. Mr. Vaughan's place with Waite Phillips will be filled by W. N. Penn, formerly of Little Rock, Ark.

KANSAS OIL MEN

WICHITA, Kans., April 11.—Although the date has not been set definitely, the next convention of the Kansas Oil Men's Association will be held either in Wichita or Topeka, it has been announced by J. A. Motter, secretary. The convention probably will be held in the late spring.

ENLARGE AMARILLO PLANT

AMARILLO, Texs, April 14.—More than $100,000 will be spent by the Amarillo Refining Co. in the near future in enlarging its plant here, according to Reese S. Allen, president. Two new 65,000-bbl. crude oil storage tanks have been purchased. The plant now has a daily capacity of 3,000 bbls.

YOUNG COUNTY SUIT

OKLAHOMA CITY, April 11.—The North American Oil & Refining Co. of Oklahoma City, has asked for a rehearing in the case wherein a master in the United States District Court of Texas recommended a judgment for $276,533 against the company and the Bank of America in favor of the Roxana Petroleum Corp. The suit involved a contract for development of leases in Young County, Texas, transferred to the Roxana by the North American.

RIVALRY OF REFINERS CAUSE PRICE CHANGES

There is a constant assumption that price instability exists nowhere but in the markets for farm products, although an examination of other prices would readily show that this is not the case. A leading newspaper of the Middle West, appealing for action for the stabilization of farm products, particularly corn, cites "the steadiness of oil" as an example of the stability desired. Now, says the bulletin of the National City Bank, the fact is that fluctuations in oil and its products in recent years have been as great as in perhaps any other commodities that can be named. Gasoline is usually represented as under more effectual control than crude oil, and the Mid-Continent Field is as good a place as anywhere to examine the market record. The stability of gasoline prices may be judged by the changes in tank wagon quotations in Oklahoma City from December 31, 1923, to February 16, 1925, as shown below. These do not include the tax, which varied during the time, but was always added:

Date of Change—	Price per Gallon
December 31, 1923	17
January 14, 1924	16
January 21, 1924	15
February 11, 1924	17
April 21, 1924	16
May 26, 1924	14
July 14, 1924	13
August 18, 1924	11.5
September 22, 1924	9.5
November 24, 1924	11.5
January 19, 1925	13.5
January 26, 1925	13.5
February 2, 1925	14.5
February 9, 1925	15.5
February 16, 1925	16.5

A drop from 17 to 9.5 from April 21 to September 22, or 44 per cent in five months, beats anything that corn has done in the past year. Although the industry has been burdened with overproduction for several years, and there has been general agreement that it was ruinous to make prices for crude that would encourage further exploration, the rivalry of the refining companies has been so keen that at every symptom of diminishing production the struggle for crude supplies has been renewed. Within two months from the first of this year the price of crude in the Mid-Continent Field advanced 53 per cent.

MONTANA CRACKING PLANT

LEWISTOWN, MONT., April 13.—The Arro Oil & Refining Co. is starting work on a cracking plant addition to its refinery at Lewistown. This plant will employ the Dubbs process and will crack the residual oils of the present plant into gasoline and coke, both of which have a ready sale in this district. The company has made arrangements for an increased amount of crude to supply the needs of the refinery.

START FARMINGTON REFINERY

FARMINGTON, New Mexico, April 14.—Mutual Oil Co. has started operation of its new refinery at Farmington and will use oil fram northwestern New Mexico fields which previously has been going to the Utah refinery at Salt Lake City. Opening of the refinery is expected to increase greatly the crude production of New Mexico.

Condensers, Coolers, Heat Exchangers

Type of Equipment of Utmost Importance. Should Meet as Wide a Range of Appllcation as Possible.

By Frank P. Peterson

Under this grouping of details we may bring first for consideration those which are rightly elements of still assembly, heat exchangers and condensers.

The type of equipment is all important. It should be simple in construction. The shell and tube type is, without question, the most rational. The design should readily accommodate dissembly and removal of the tube element for cleaning and inspection. Internally packed joints are to be avoided as far as possible. Either the length of unit structures must be kept down to where the expansion factors may be neglected, as is practiced by one prominent builder of the type advocated, or provision of an expansion joint must be made between shell and tube elements, as considerable inequalities in temperature must occur here.

Unit equipment should be selected and developed to meet as wide a range of application as possible. There is no reason why a logically constructed cooler element should not serve all three functions, the cooling of gas, the condensing of gasoline vapors and the after-cooling for re-compressors, and the temperature exchanges sought in the cycle of oil circulation outside of the still itself but as a function of still operation. And where closed circulation of engine jacket water is applied, the same unit will be ideal. If this may be done, we shall have approached a long way toward standardization of large gasoline plant equipment. How exceedingly simple, then, would become the work of plant construction and assembly in these details. It has already been done. The results are gratifying. It can be predicted that standardized equipment will become universal thus far, leaving for pregressive development to the same stage such other things as control for "stabilization" of stocks, general features of power auxiliary drives, type and arrangements of absorber equipment, minor details for automatic operation control, etc.

Practical Type

It will not be out of place to present a practical type suggestion. Figure 10 will illustrate it. Multiplication units of this type will serve all purposes for expansion or contraction of plant to meet varying capacity conditions. Very limited expense is called for in the way of concrete material for footings on which to erect the type; consequently, when the time for removal of portions of the equipment for contraction of plant arrives the loss chargeable to investment in foundations is negligible. And the matter in all these cooling, condensing and heat-exchange details of plant is resolved to lines of its selection, installation and removal as simple as that of the compressors required for handling of the gas. A battery of the coolers to serve for gas cooling after compression, manifolding with their gas outlets to one (or at most two) accumulators; another battery of the same unit equipment as after-recompressor coolers, another for gasoline condensers, still other units in assembly as heat exchangers and finally these direct productive elements supplemented by the same unit type for the cooling of engine jacket water and for the condensing of exhausts and steam from such heating as is required of boilers makes up an assembly that is not only sightly and pleasing in appearance, but a comparison of cost will also appear pleasing.

It might be suggested that something of the available cooling of water by atmospheric sprays will be lost. This will not find support in practice where logical arrangement of tower cooling and circulation of the water is provided.

The arrangement of pipes in the open for gas and vapor cooling has always been subject to the well directed criticism that application of the flow of cooling water in temperature parallel is wrong and cannot be corrected, because to do so would be just out of concert with the physical scheme of the thing: we cannot load up the coils with the fluid condensate (or precipitate) and make it climb the course in opposite direction to the water flow—counter cooling—which is right. What happens in consequence?

Cooling Water Stream

In order to reach the nearest approach possible to wet bulb temperatures in the cooling water stream, we try to so control the stream in volume as to compensate the initial temperature loss in the water as it contacts with the hottest gas or vapor which is to be cooled. We provide a cooling stream much in excess of the actual requirement, if it were otherwise properly applied. We consume the corresponding excess power required to move the water from place to place. We pile up a flood of water as it passes over the coils and defeat the scheme of film surface cooling as it appears in theory. We occupy an excessive space with coils and sprays and louvres, and our water consumption lost to the atmosphere in evaporation and windage waste mounts to a probable 3.5 gallons water per gallon day of gasoline production. We still fall short, in our best efforts with the 2-inch pipe and atmospheric sprays over it, of wet bulb accomplishment by 10 degrees or more. We have, in the case of the open louvred, spray system, difficulties requiring skill and the best judgment to maintain any kind of regularity in product quality under sudden changes of atmospheric temperature. This difficulty will not be entirely eliminated but it will be reduced in a closed system of water handling by bringing the observation of water temperature more immediately to hand at and where the temperature application is made in its effective product result. And the problem is complicated the more in open coil structures with ice masses when atmospheric temperatures run to low ranges.

In a system of enclosed tubular coolers the application of the lowest available water temperatures can be had where it is wanted, namely at the end of the cooling treatment. This temperature range can be within 10 degrees of the wet bulb. The handling of the water can be done through special towers designed for the purpose, whereby a minimum loss will be sustained in wind wastage and whereby direct and immediate recirculation of water can be effected for the special requirements such as oil cooling and the condensing in summer of gasoline vapors.

Depreciation of equipment in the closed system will be less than one-third what it is in the open. Manifolding of connections is simplified and cheapened. Symmetry of arrangement not only contributes to appearance but makes for quick and ready perception of the means of operating control by those to whom operation is entrusted. No difficulty whatever need be encountered with ice and frost accumulation.

Much more might be said in less definite terms in favor of closed tubular equipment. Not a great deal can be said in favor of the open system and the 2-inch pipe, except that we are coming out of it. If for no other reason alone, the reduction of tube bore justifies the selection of the type. Cooling of any fluid medium depends for efficiency on contacting of that medium with the retaining wall through which it has to receive its cooling. Certain factors, coefficients of heat transfer and transfer of the medium in terms of speed contact with the wall surfaces are to be respected. They are fundamentals. We cannot overlook or go around the barriers which they present. We are told in the language of authority that fluid films measured in this case in terms of temperature) exist along and in contact with the surfaces of walls by which they are contained; that these films offer definite resistance to transmission of heat through themselves and that this resistance (i.e., its extent in retardation of what we seek), depends upon the character of the fluid and its motion along the wall. "The resistance of a film of hot gas is very high." I have no data as to how high this is.

Film of Water

In the case of a liquid, such as water, let one attempt to turn the body of the water by revolving the glass or other container in which it is held. If a particle floating in or suspended by gravity in the water is observed, it will be noted that the water is not revolving with the container; yet we know that a film in contact with the container surface does move at the rate the surface moves in casual observation. Cause the floating or suspended particle to come into contact or close proximity to the surface of the container and note this. We seek, then, to break up or disturb as much as possible these films which occur between what we seek to cool and the wall through which the cooling effort must be carried on. Exactly the same conditions and reasoning apply on both sides of the wall. If we could reduce space between walls so as to contact the film only with the wall and keep the film moving with regard to temperature graduation between two mediums on either side of the wall, we should expect the ultimate of efficiency up to that point of speed in movement of the mediums as would react in frictional temperature in excess of the minimum of the lower of the two mediums, and the discussion runs readily into complex physics. The limitations to practical reduction of tube bores have been previously noted, and it has been stated that we will obtain effective results within the practical limits mentioned. This will be done by speeding the movement of the fluids or liquids between which heat exchange is desired up to the practical limit of involved frictional energy loss, noted in pressure drops of the fluids as they are forced through the equipment. We shall, in theory and practice, roll up these insulating films from the wall of the tube in which they are confined, and bring new films into contact for cooling. Perfect exchange of temperature will only result when we have brought each particle of fluid into contact with the cooling wall long enough to permit of the heat transfer sought, but we can seek only a very relative degree of this perfection. Oberfell, as a result of the foregoing considerations, has stressed the importance of speed of transmission of saturated ingoing and outgoing absorbent oils in still operation in absorption plants.

Formula Presented

Formula presented for use in providing surface area to fit a heat-exchanger condition of given assumption takes into account the following, for liquids:

Weight, pounds per gallon=W.

Gallons circulated per hour=Q.

Drop in temperature of the imparting medium, denuded oil, for instance, in degrees Fahrenheit=R.

Temperature difference between imparting and receiving mediums, as that of denuded and saturated oils respectively, at one or the other of the ends of heat-exchanger=D_1.

Temperature difference for the same mediums at the cooler, or opposite end of the same exchanger=D_2.

The mean difference of temperature of the liquids during exchange of temperature=M.

Since M is equal to $\frac{D_1 - D_2}{\text{Loge } \frac{D_1}{D_2}}$ (that is, the difference between D_1 and D_2 divided by the hyperbolic logarithm of D_1 divided by D_2), it will be necessary to dig this M factor out first and use it in the formula for obtaining a known or assumed factor, K, which is to be taken as a coefficient for heat transfer. And, again it may reasonably be inferred that this does not end the matter, although, how far we may apply other factors which involve the conductivity of different metals and their thicknesses for the case in point the writer is not prepared at this moment to say.

A little confusion is likely to arise in the mind of the practical man as to just how these factors are used and to what, precisely, they refer in the formula. A simple sketch, Figure 9, is offered, which will make the matter clear:

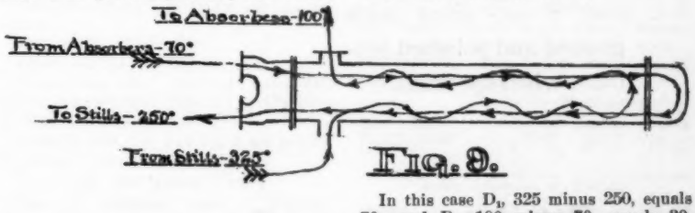


FIG. 9.

In this case D_1, 325 minus 250, equals 70; and D_2, 100 minus 70, equals 30, and M, we find to be for this case, 47.3. We may now find K equal to $\frac{Q \times W \times 0.5 \times R}{47.3 \times S}$, if we have S, S being the surface in square feet of tube wall in the cooler or exchanger. At this present stage of the art, it reminds one somewhat of "ham and eggs."

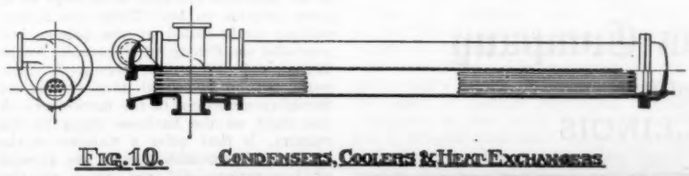


FIG. 10. CONDENSERS, COOLERS & HEAT EXCHANGERS

A Sample

GIVE your customers and prospects a "close-up" of what you have to offer.

Dip into one of those huge reservoirs that dot the fields of your Refinery—bottle 2, 4, or 8 oz's of some particular stock and send it to a logical prospect.

Our Sample Oil Bottles are blown from the same glass that goes into the finest perfume ware. It is clear and sparkling and shows the color and flow of an oil perfectly.

Available in 2 oz., 4 oz., and 8 oz. sizes with ground and polished bottoms when specified.

Illinois Glass Company

Established 1873

ALTON, ILLINOIS

FIRMER GASOLINE MARKET IN CHICAGO

Consumption Large for Season and Improving Every Day. Kerosene Quiet. Gas Oil Little Changed. Fuel Oil Firm Due to Slow Movement Rather Than Increased Demand. Price Cutting in Some Sections

By J. B. Waldo

CHICAGO, April 11.—"One of the tragic things in the oil industry," said one of the leading oil men of the country, "is that when the demand for gasoline is at its height, prices are at the low point and when the demand is least then prices are high by comparison." As he spoke he pointed to a charted record of gasoline production, consumption and prices, and called particular attention to the fact that high prices ruled when the gallonage was small and low prices prevailed in the height of the season. He further said he was afraid the condition would be repeated this year and if it was it could not be blamed on the weather nor on the large companies for they had all been buying. This year, according to this gentleman, those to be blamed are the Mid-Continent refiners who have increased their runs when there was no reason for it but every reason against it.

Is this true? Some of the trade have been asked and they as promptly deny that the action of the refiners anywhere is the chief reason. According to many who have been told of this occurrence, the real trouble is that prices are advanced when the consumption is small and the only possible result is for those who must live by selling the output of their plants at prices which will make them a profit to try and take advantage of the opportunity to sell at the advanced prices. The necessity of advancing the basic prices at the time when the demand is least is not obvious if the law of supply and demand is to rule as it is supposed to do. Crude advances and tank wagon advances in January are bound to increase the optimism that plays such an important part in the oil industry, and with the outlook so rosy it is hardly fair to blame the Mid-Continent refiners for acting on the suggestion of these advanced prices that leaders in the industry feel assured the future is bright. But it has happened before and the excuse for its happening again appears to be that "things are going to be different this year."

Right now the consumption is large for the season and is improving every week. The country over has had a spring when the weather conditions have been most unusually favorable. The larger companies report increases ranging from 20 to 30 per cent over last March. According to reports received in this city from good sources of information, refiners' stocks are being drawn on and refinery runs reduced. Even now the great sources of crude supply, the Prairie Oil & Gas Co., and the Sinclair Crude Oil Purchasing Co. are reported to be drawing on stocks to the extent, that report states, of 34,000 barrels a day. Others are undoubtedly doing the same in proportion to the extent of their operations. This being the case the market should improve.

Gasoline Firmer

Locally at least it is doing so. Gasoline closed the week rather firmly held at 10 cents with an outlook that by the early part of next week this price might be a low one for U. S. Motors gasoline. This is almost certain to be the case if the week-end business is as large as it gives promise to be. There are orders waiting to be filled at the prices that prevailed on Friday of 9½ cents North Texas and 9¾ cents Group 3, that could not be placed at those prices on Saturday according to the marketers. A side light on the business doing in the country, is that quite a number of the smaller jobbers who usually are present at conventions did not come to the gathering at the Congress Hotel last week because their business was so good they could not leave it. They are the jobbers that are active in the actual conduct of their business. Not all gasoline sellers were feeling as strongly regarding the market conditions, but some were anxious to buy cheaply to cover some of the sales at low prices. But the larger concerns who sell what they own or what they know they can buy stated almost as a unit that the 9½-cent Motors gasoline was all gone and that they would have to pay refiners at least a quarter of a cent more now. One concern wired its agent to buy all the 58-60-437 gasoline it could at 9½ cents and its total purchases, made all of them previous to Friday night, were five cars from a refiner considered as rather doubtful.

The demand right now is almost entirely for the U. S. Motors grade, very little of the higher tests being sold in the spot market. Refiners with a considerable number of marginal contracts state their customers are taking their full allotments promptly and in some cases asking for extra cars. Many jobbers who make a specialty of a higher grade of gasoline than the regular tank wagon grade receive their supplies on contracts, and as a matter of fact the number of distributors and very large consumers such as taxicab and bus companies that are under contract is so large that the spot market does not fully represent the activity in consumption or distribution. Of course there are some large buyers that fill most or all of their wants by spot purchases but it is doubtful if more than 20 per cent of the gasoline consumed in the territory is bought in the spot market, so that the consumption may be large and the daily demand as noted in the spot market be really light. But the price situation responds to the demand from any source and the firmer market today is more due to the fact that the distributors are having a good business than that the actual spot market business is large.

Kerosene Quiet

Kerosene is still quiet. One or two refiners report a better demand and state they are getting good orders, but the movement has not spread to the market as a whole and some dealers are getting pretty tired of waiting for the demand. Curiously enough they are inclined to blame the good weather in part at least for the lack of tractor demand. They say the farmer has his horses and prefers to use them as he must feed them, work or no work. If the season is good he has ample time to prepare the fields and plant his crops and can use horse power, but if the weather is bad and he must hasten his operations he gets out the tractor. This year he has had plenty of time and has not needed to use the tractor except in such farms as are of unusual size, and—horses do not consume kerosene. That is their theory. Some still hope for improvement and say they will hang on for a time, but others have disposed of their holdings of kerosene and are only buying as they sell.

Distillates are just about through and the only demand is from the user of small burners for some industrial purpose. The market will be quiet until August at least when the trade will begin to inquire as to contracts for the coming year. Some refiners are experimenting and testing various grades and kinds of fuel oil and trying to produce something that will most nearly meet the requirements of the domestic oil burner as evidenced by their experiences during the past season. Two things stand out as preminently necessary in a desirable distillate for the domestic burner and these are flash and odor. The

demand for a prime white color or ever a straw color is less felt as the users have found that color really makes no difference if the essential qualities are there. The oil must also have a low cold test and be clean from sediment. It is currently talked that the consumption for next winter is liable to be double or more than double what it was last winter. No attempts to name a price for next season will be made now but it is believed it must be somewhat higher.

Gas oil is little changed from last week. There has been nothing notable in the demand, supply or prices. The time of the year is against any large consumption except by refiners for cracking and as right now refiners are reducing rather than increasing their runs, some have more gas oil for sale than recently.

Fuel Oil Firm

Fuel oil is firm, a condition due more to slow movement from refiners than to any increase in the demands. Many of the largest consumers under usual circumstances, are today placing orders for a week at a time. One of the very large burners of fuel oil orders ten cars a week, no more and maybe less, and wants prompt deliveries. The last order was placed on a Friday and it had to have at least one car by Monday. Quite a number are pursuing the same policy and it is not a bad thing, for if their consumption does pick up they will be in the market at once for additional supplies which they must have immediately and cannot draw from stock while shopping around for the lowest possible price.

The outlook for fuel oil consumption by the steel industry is not good. Railroad consumption is on the increase and the takings by several of the larger industries that consume fuel oil in quantities will continue large although the low price of steam coal is enticing some fuel oil consumers to change to the solid fuel. The prices of Smackover crude have declined and at the close of the week the price was roughly 5 cents a barrel less than for 24-26 refinery fuel oils. There are reports of sales made over May for $1.00 a barrel, but with refiners firm at $1.05 and very slow to offer at any price right now, the market here is quoted as firm at $1.07½ with many not quoting under $1.10. On the other hand some of the largest buyers have a price pegged of $1.05 which makes for a profitable business—for the buyer if he can place an order. It is claimed here that stocks are not small but refiners are getting so much better prices on deliveries on contracts made some time ago with a percentage of the crude advance that they are shipping these orders and neglecting the spot buyer, which would be only natural, if not good business, for in the long run it is the buyer that absorbs the surplus that makes the price.

Lubricants Active

Lubricating oils continue in fairly active request from the jobbers as the season for motoring and farm work is getting under way. There has been a fairly steady consumption of oils and greases by the industries. The market for western bright stocks, neutrals and the like is firm although with the Pennsylvania refining market for lubs easier the price situation is not so strong as it was. The export demand is rather good but shipments on orders are for the most part in less than cargo lots as reported in this market.

Price Cutting

There has been no general change in the tank wagon markets. There is considerable price cutting in some sections. There is a great difference of opinion among the oil men regarding the proper course to pursue regarding prices. The Michigan independents for example take considerable credit to themselves for keeping their prices in line, and to quote one, "clean as a hound's tooth." Judging from the remarks of some of the South Dakota jobbers they feel that prices are a local condition and that each city or town or even individual must make his own plans and prices according to the conditions that govern in his market. Some jobbers are showing the difference between drive-in service and bulk-station service by installing pumps in their local plants with nothing to sell but gasoline and selling at the state price, and they say making money. However it has been found on some occasions that the buyer at the bulk station at a price will drive in at the drive-in station and help himself to free air.

EASTERN MARKETS CONTINUE WEAK, EXPORT BEING WORSE THAN DOMESTIC

By N. O. Fanning

NEW YORK, April 11.—The Eastern refined oil markets continued weak during the last seven days, the feature being a general reduction of 1 cent per gallon by the Standard Oil Co. of New Jersey in the gasoline tank wagon market in all States of its territory except West Virginia. The tank wagon market in New Jersey is now generally 17 cents per gallon.

The Jersey company also reduced the tank wagon price of kerosene ½-cent per gallon generally making 12½ cents in New Jersey.

An unusual feature of the situation is that export prices were not reduced on the Atlantic Seaboard. The export market here has been in a worse slump than the domestic market. Also, export quotation of all grades of gasoline were cut ½ cent on the Gulf Coast, but not here.

The reduction in domestic gasoline prices on the Atlantic Seaboard south of the Hudson River (and not north of it, or in the territory of the Standard Oil Co. of New York), was attributed to the increased prevalence of price cutting by small independents. The Hudson River often forms a barrier to these independents, who do not cross into New York Co.'s territory in eastern New York or New England, largely because of increased transportation costs.

However, a reduction by the Standard Oil Co. of New York is expected any day, as the price cutting companies are attracted by the differential of 3 cents per gallon now existing between the New York and New Jersey tank wagon market.

There have been evidences of general price cutting in New York City in the last few days for the first time this year. Some service stations offer gasoline as low as 20 cents (retail) compared with 23 and 24 at service stations using gasoline of companies quoting 20 cents tank wagon basis.

Small Fellows at Disadvantage

It is pointed out by some market authorities that some small refiners in the Mid-Continent have entered the Eastern markets because large buyers of their product f.o.b. refinery have withdrawn and with crude prices at the year's peak they are in need of immediate cash. This is a statement made to the writer, which it is supposed covers conditions in a territory too far away for the facts to be checked. Evidence of "dumping" is available here, however, which speaks for itself.

The obvious way out of the difficulty is for the large fellows to enter the Mid-Continent market again, which they will probably do in the near future as it is believed their stocks of gasoline in this territory are at a comparatively low point. This would probably bring an end to price cutting and bring about renewed strength in the Eastern tank wagon structure.

Tank Wagons in New York

Although the ordnance requiring the delivery of gasoline to service stations in New York City in steel barrels, instead of tank wagons, went out of existence last December, steel barrel delivery is still the rule. The city of New York has not yet issued its specifications for tank wagons, but they are expected to be published any day. Some oil companies using tank wagons outside of the city are making some trips with them inside the city limits, but these are about the only gasoline tank wagon deliveries being made.

Fuel Oil Soft

Heavy crude has been coming into Eastern refineries at a high rate from California and Mexico; also topped oil. For this reason and because the demand for bunker oil has fallen off in the last few weeks, lower prices may be expected in the near future. Marketers point out there is also a surplus of Gulf Coast crude, which has already caused a softening in Gulf Coast prices of both lubricants and fuel oils.

Lubricants Weak

Despite an improved demand, lubricating oil prices on the Atlantic Seaboard are weak. This is mostly in sympathy with lower crude prices and the reductions made in the Gulf Coast lubricating oil markets.

During the week cylinder stock was reduced 1 cent per gallon, light filtered, 600, from 46 to 45 cents per gallon in barrels, and No. 5 bright stock from 49 to 47. Red oils were reduced 1 cent per gallon all along the line.

No. 5 bright stock is now 3 cents per gallon below the year's peak of 50 cents.

Oil Export Market

The oil export market was featured during the past week by continued large inquiry for lubricating oils and wax. This demand came largely from England, France, Belgium and Italy. There was also some demand for bulk gasoline and kerosene from European distributors for future delivery. Germany was reported particularly active in the bulk gasoline export market.

Whether higher prices restricted buying of oil products abroad or whether stocks had increased to the point of oversupply early this year, the export demand has not regained the pace maintained in the latter part of 1924 and in January this year. There does not seem to be the sustained buying power and the volume of exports has consequently fallen off materially at this port.

One factor in the export situation doubtless is that the price increases on the Atlantic Seaboard threw many prospective export buyers into other markets. The Anglo-American Oil Co., Dutch-Shell combine and other large foreign distributors who had been buying in the Atlantic Coast and Southwestern refinery districts turned to California, their purchases there aggregating 100,000,000 gallons, according to a reliable estimate.

London Oil Prices

Benjamin & Co., London oil brokers, say: "Following are the wholesale market quotations, delivered prices in cans, in London and adjacent areas:

Aviation spirit, 1s. 8d. per gallon.

Gas oil, 5¾ d. per gallon in bulk, ex wharf.

Kerosene, water white, 10 pence per gallon; water white, 9 pence.

Fuel oil (20 grs.) £4 2s 6d per ton, ex wharf.

Bunker oil, £3 17s 6d.

Diesel oil, £4 17s 6d. per ton.

Lubricating oils: American pales, £12 to £25 10s. per ton; reds £14 to £24 10s; filtered cylinders, £15 to £36.

Paraffin wax, 3½ d to 5¼ d per pound, depending upon melting point.

Look for Lower Prices

One oil exporter says: "Foreign buyers of oil products are cautious in regard to buying American oil at current quotations. The reduction in the tank wagon market is expected to have the effect of further restricting foreign purchases, at least until the export market is brought into line. So long as the outlook is for lower prices, the export market will remain dull.

"Oil interests in foreign countries seem to have an uncanny sense as to conditions in the United States, perhaps because they view them from a distance. They seem to know when a reduction in prices is coming or when a rise is due. Naturally they do their buying accordingly. A changing market restricts actual sales, whether the market is rising or falling."

Weekly Shipments

Actual shipments of petroleum last week reached a new low point. The bottom has dropped out of the bulk movement, if the present indications can be relied upon. No bulk cargo shipments have been reported in the last three weeks.

Case shipments held up fairly well until the last week, when they, too, fell off sharply. During the week ended April 8 case shipments of gasoline amounted only to 887,410 gallons, and of kerosene only 547,960 gallons.

The outgoing movement of lubricating oil and wax also fell off, barrel exports of lubricants aggregating only 978,500 gallons, approximately, while shipments in cases totaled only 117,930 gallons.

Paraffin wax exports fell to a new low weekly total, amounting to only 11,000 pounds of refined and 1,580 bbls. of unrefined.

Principal Exports

The following table shows principal exports of petroleum and petroleum products from New York reported during the past three weeks (figures in gallons unless otherwise states in parentheses):

Item and how shipped	Week ended Apr. 8	April 1	March 25
Gasoline—			
Cases	887,410	2,518,830	1,963,750
Kerosene—			
Cases	547,960	1,918,950	3,273,120
Lubricating Oil—			
Barrels	978,500	2,005,100	831,400
Cases	117,930	66,250	203,060
Lubricating Grease—			
Barrels (bbls.)	508	1,260	.....
Paraffin Wax—			
Bags (lbs.)	11,000	1,608,080	768,020
Barrels (bbls.)	1,580	575	.....
Crude Oil—			
Barrels (bbls.)	2,981	.....	6,213
Petroleum Asphalt—			
Barrels (bbls.)	869	.....	.....
Petroleum Coke—			
Tons	1,032	.....	.....

One feature of the export movement during the week was the shipment of 1,032 tons of petroleum coke to France. This is the largest export sale of coke reported in months.

Oil Receipts

The feature of The Oil and Gas Journal's weekly estimate of receipts of crude and refined oil at Atlantic ports for the past week was the continued large receipts from the Gulf Coast. The daily average receipts from the Gulf were 315,000 bbls., compared with 296,000 bbls. the preceding week and 360,000 bbls. two weeks ago. This makes a daily average for the last three weeks of 324,000 bbls., against a daily average of 273,000 bbls. for the month of March.

Total receipts during the week ended April 8 were not large, averaging 480,000 bbls. daily, against 477,000 the week before and 642,000 bbls. two weeks before.

Receipts from California last week fell off further to 49,000 bbls. daily, indicating that the large movement of three and four weeks ago was only temporary, and the California will not be as much of a factor in the Eastern markets as was expected.

The following table shows daily average receipts of crude and refined oil by water at Atlantic ports from the Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for the last 12 months (figures in barrels):

	Week ended April 8	April 1	Mar. 25
Gulf Coast	315,000	296,000	360,000
Pacific Coast	49,000	52,000	121,000
Imports	116,000	129,000	161,000
Total	480,000	477,000	642,000

Daily Averages by Months	Gulf	Pacific	Impts.	Total
March, 1925	273,000	52,000	135,000	490,000
February	262,000	51,000	147,000	460,000
January	311,000	77,000	133,000	521,000
Dec., 1924	306,000	83,000	85,000	474,000
November	246,000	80,000	150,000	476,000
October	246,000	126,000	88,000	454,000
September	270,000	104,000	101,000	475,000
August	310,000	127,000	84,000	521,000
July	318,000	85,000	114,000	517,000
June	302,000	133,000	136,000	571,000
May	276,000	122,000	144,000	542,000
April	262,000	143,000	123,000	528,000

Foregoing estimates are based on the capacity of incoming oil-laden tankers.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	April 14		April 7		Mar. 31	
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.09¼	.09½	.09¼	.09½	.09¾	.10
56-58 450 end point	.09¼	.09½	.09½	.09¾	.10	.10¼
58-60 437 end point (U. S. Motor)	.09¾	.10	.09¾	.10	.10¼	.10½
60-62 400 end point	.11	.11¼	.11½	.11¾	.11½	.11¾
64-66 375 end point	.12	.12¼	.12¼	.12¾	.12¾	.13
68-70 350 end point	.12¾	.13	.13	.13¼	.13¼	.13½
KANSAS—						
58-60 437 end point (U. S. Motor)	.10	.10¼	.10	.10¼	.10¼	.10¾
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.09¼	.09½	.09¼	.09½	.09¾	.10
50-52 440 end point (Naphtha)	.09¼	.09¼	.09¼	.09½	.10	.10¼
56-58 450 end point	.09¼	.09½	.09½	.09¾	.09¾	.10
58-60 437 end point (U. S. Motor)	.09¾	.10	.09¾	.10	.10	.10½
60-62 400 end point	.11	.11¼	.11½	.11¾	.11¾	.12
64-66 390 end point	.11¾	.12	.12¼	.12¾	.12½	.12¾
64-66 375 end point	.12	.12¼	.12¾	.13	.12¾	.13
68-70 360 end point	.12¾	.13	.13	.13½	.13¼	.13½
NORTH LOUISIANA—						
56-58 450 end point	.10	.10¼	.10	.10¼	.10¼	.10½
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10¼	.10½	.10½	.10¾
60-62 400 end point	.11½	.12	.11½	.12	.11½	.12
64-66 390 end point	.12¾	.13	.13	.13¼	.13	.13¼
64-66 375 end point	.13¼	.13½	.13¼	.13½	.13¼	.13½
ARKANSAS—						
58-60 450 end point	.10	.10¼	.10	.10¼	.10¼	.10½
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10¼	.10½	.10½	.10¾
64-66 375 end point	.12¾	.13	.13	.13¼	.13¼	.13½
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.12¾	.13	.13¼	.13½	.13¼	.13½
PENNSYLVANIA—						
52 Naphtha	.12¾		.12¾		.12¾	
54 Naphtha	.12¾		.12¾		.12¾	
56 Gasoline	.13		.13		.13	
58 Gasoline	.13¼		.13¼		.13¼	
60 Gasoline	.14		.14		.14	
62 Gasoline	.14¾		.14¾		.14¾	
64 Gasoline	.15		.15		.15	
66 Gasoline	.16		.16		.16	
68-70 Gasoline	.18		.18		.18	
CALIFORNIA—						
54-56 437 end point (U. S. Motor) domestic	.11	.11½	.11	.11½	.11	.11½
CHICAGO DIST. (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09½	.09¾	.09¾	.10	.10	.10¼
56-58 450 end point	.09½	.09¾	.09¾	.10	.10	.10¼
58-60 437 end point (U. S. Motor)	.10		.10¼	.10½	.10½	.10½
60-62 400 end point	.11¼	.11½	.11¼	.11¾	.11¾	.12¼
64-66 375 end point	.12¼	.12½	.12¼	.12¾	.13	.13¼
68-70 360 end point	.13	.13¼	.13¼	.13½	.13½	.14

NATURAL GASOLINE

	April 14		April 7		Mar. 31	
OKLAHOMA (Group 3)—						
⌈Grade Double A, 80-87.9, 375 e.p., rec. 90%	.09	.09¼	.09	.09¼	.09¼	.09½
⌊Grade A, 72-79.9, 375 end point, rec. 90%	.09	.09¼	.09	.09¼	.09½	
⌈Grade Double B, 84-92, 375 e.p., rec. 95%	.08		.08	.08¼	.08¼	
⌊Grade B, 76-83.9, 375 end point, rec. 85%	.08		.08	.08¼	.08¼	
Grade C, 80-90, 375 end point, rec. 78%..	.07	.07¼	.07	.07¼	.07¼	.07½
NORTH TEXAS—						
⌈Grade Double A, 80-87.9, 375 e.p., rec. 90%	.09	.09¼	.09	.09¼	.09¼	.09½
⌊Grade A, 72-79.9, 375 end point, rec. 90%	.09	.09¼	.09	.09¼	.09¼	.09½
⌈Grade Double B, 84-92, 375 e.p., rec. 85%	.08		.08	.08¼	.08	.08¼
⌊Grade B, 76-83.9, 375 end point, rec. 85%	.08		.08	.08¼	.08	.08¼
Grade C, 80-90, 375 end point, rec. 78%..	.07	.07¼	.07	.07¼	.07¼	.07½
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 end point, rec. 90%..	.09½		.09	.09½	.09¾	.10
Grade B, 76-83.9, 375 end point, rec. 85%..	.08½		.08¾	.09	.08	.08½
Grade C, 80-90, 375 end point, rec. 78%...	.07¾		.07¾	.08	.07¾	.08
CALIFORNIA—						
68-80 absorption, 360-390 end point	.13	.13½	.13	.13½	.13	.13½
78-84 compression, 350 end point	.13½		.13½		.13½	
CHICAGO DIST. (Based on Group 3)—						
⌈Grade Double A, 80-87.9, 375 e.p., rec. 90%	.09	.09¼	.09	.09¼	.09¼	.09½
⌊Grade A, 72-79.9, 375 end point, rec. 90%	.09	.09¼	.09	.09¼	.09¼	.09½
⌈Grade Double B, 84-92, 375 e.p., rec. 85%	.08	.08¼	.08	.08¼	.08¼	.08½
⌊Grade B, 76-83.9, 375 end point, rec. 85%	.08	.08¼	.08	.08¼	.08¼	.08½
Grade C, 80-90, 375 end point, rec. 78%..	.07	.07½	.07	.07½	.07¾	

MOTOR NATURAL GASOLINE (BLENDS)

	April 14		April 7		Mar. 31	
OKLAHOMA (Group 3)—						
60-62 450 end point	.09¼	.09½	.09¾		.10	
64-66 437 end point	.09¼	.09½	.09¾		.10	
68-70 430-435 end point	.09¼	.09½	.09¾		.10	
NORTH TEXAS—						
58-62 440 end point	.09¼	.09½	.09¾		.09¾	.10
58-60 450 end point	.09¼	.09½	.09¾		.09¾	.10
PENNSYLVANIA—						
*60-62	.13		.13½		.13½	
*64-66	.13		.13½		.13½	
*66-68	.13		.13½		.13½	
*68-70	.13		.13½		.13½	
CHICAGO DIST. (Based on Group 3)—						
60-62 450 end point	.09¾	.10	.09¾	.10	.10	.10¼
64-66 450 end point	.09¾	.10	.09¾	.10	.10	.10¼
68-70 437 end point	.10	.10¼	.10	.10¼	.10¼	.10½

*At Sistersville, W. Va.

BURNING OIL

	April 14		April 7		Mar. 31	
KANSAS—						
41-43 water white Kerosene	.04¼	.04½	.04¼	.04½	.04½	.04¾
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04	.04¼	.04	.04⅛	.04¼	.04⅜
42-44 water white Kerosene	.04¼	.04½	.04¼	.04⅜	.04⅜	.04½
40-41 prime white Kerosene	.03¾	.04	.03¾	.04	.04	
NORTH LOUISIANA—						
41-43 prime white Kerosene	.04¾	.05	.04¾	.05	.04¾	.05
42-44 water white Kerosene	.05	.05¼	.05	.05¼	.05¼	.05½
ROCKY MOUNTAIN STATES—						
*40-42 water white Kerosene	.07	.07¼	.07	.07¼	.07	.07¼
NORTH TEXAS—						
41-43 water white Kerosene	.04	.04⅛	.04	.04⅛	.04¼	.04½
40-42 prime white Kerosene	.03¾		.03¾		.04	
41-43 prime white Kerosene	.04	.04⅛	.04	.04⅛	.04¼	.04½
42-44 water white Kerosene	.04¼	.04½	.04⅛	.04¾	.04⅜	.04½
ARKANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04¾	.05	.04¾	.05
42-44 water white Kerosene	.04¾	.05	.05	.05¼	.05	.05¼
PENNSYLVANIA—						
43 Kerosene prime white	.06⅝		.06⅝		.06⅝	
45 Kerosene water white	.06¾		.06⅝		.96⅜	
46 Kerosene water white	.07¼		.07¼		.07⅜	
47 Kerosene water white	.07¾		.07¾		.08	
34 Neutral	.07½		.08		.08¼	
34 Sundebloomed Neutral	.08½		.09½		.09¼	
36 Miners' Neutral	.07½		.07½		.07⅜	
300 Mineral Seal	.07½		.07¾		.07¾	
CALIFORNIA—						
40-42 water white (high burning test)	.07½	.08	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.08½	.09	.08½	.09	.08½	.09
Engine distillate, 42-44 480 end point	.07¾	.08	.07¾	.08	.07¾	.08
CHICAGO DIST. (Based on Group 3)—						
41-43 water white Kerosene	.04¼	.04½	.04½	.04¼	.04¼	.04⅜
42-44 water white Kerosene	.04⅜	.04½	.04⅜	.04½	.04½	.04⅝

*Colorado points.

FUEL OILS

	April 14		April 7		Mar. 31	
KANSAS—						
24-26 Fuel Oil	1.15	1.20	1.20	1.25	1.20	1.25
32-36 Gas Oil	.03¼	.03½	.03½	.03⅝	.03½	.03⅝
38-40 Distillate	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.00	1.05				
22-26 Fuel Oil (sellers' cars)	1.05	1.07½	1.05	1.07½	1.07½	1.10
24-26 Fuel Oil (buyers' cars)	1.05	1.07½	1.05	1.07½	1.05	1.10
24-26 Fuel Oil (sellers' cars)	1.05	1.10	1.10		1.10	
28-30 Fuel Oil (sellers' cars)	1.15	1.20	1.15	1.20	1.15	1.20
32-36 Gas Oil	.03	.03⅛	.03	.03⅛	.03⅛	.03¼
36-38 Distillate	.03⅛	.03¼	.03⅛	.03¼	.03¼	.03⅜
38-40 Straw distillate	.03¼	.03⅜	.03¼	.03⅜	.03⅜	.03½
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.15	1.20	1.15	1.20	1.15	1.25
26-30 Fuel Oil	1.25		1.25	1.30	1.25	1.30
32-36 Gas Oil	.03	.03⅛	.03⅛	.03¾	.03¼	.03⅜
36-38 Distillate	.03¼	.03⅜	.03¼	.03⅜	.03⅜	.03½
38-40 Straw distillate	.03⅜	.03½	.03⅜	.03½	.03½	.03⅝
NORTH LOUISIANA—						
18-20 Fuel Oil	1.10	1.15	1.10	1.15	1.20	1.25
32-36 Gas Oil	.03½	.03¾	.03½	.03¾	.03¼	.03½
ARKANSAS—						
38-40 Distillate	.03¾	.03⅞	.03¾	.03⅞	.03¾	.03⅞
32-36 Gas Oil	.03¼	.03½	.03½	.03⅝	.03½	.03⅝
22-26 Refinery Fuel Oil	1.05	1.10	1.10	1.15	1.10	1.15
GULF COAST (South Texas)—						
Gas Oil	.04¾	.05	.04¾	.05	.04¾	.05
Fuel Oil	1.65	1.70	1.65	1.70	1.65	1.70
PENNSYLVANIA—						
30-34 Fuel Oil	.04¼		.04¼		.05¾	
36-40 Fuel Oil	.05½		.05½		.06	
CALIFORNIA—						
33-36 Distillate	.04¾	.05	.04¾	.05	.04¾	.05
27-33 Distillate	.04	.04½	.04	.04½	.04	.04½
15-20 Fuel Oil (at tide water)	1.60	1.65	1.60	1.65	1.60	1.65
CHICAGO DIST. (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	1.07½	1.12½	1.05	1.10	1.10	1.12½
22-24 (El Dorado)	1.05	1.10	1.05	1.10	1.05	1.10
18-20 (Smackover)	1.05	1.10	1.05	1.10	1.10	1.12½
32-36 Gas Oil	.03½	.03¼	.03¼	.03¼	.03¼	.03⅜
36-38 Distillate	.03⅜		.03¼	.03⅜	.03⅜	
38-40 Straw distillate	.03½		.03⅜	.03½	.03½	

LUBRICATING OILS AND WAX

	April 14		April 7		Mar. 31	
OKLAHOMA (Group 3)—						
Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
100 vis., 2 color, 20-25 cold test	.08½	.09	.08½	.09	.08½	.09
100 vis., 3 color, 20-25 cold test	.08	.08½	.08	.08½	.08	.08½
150 vis., 3 color, 20-25 cold test	.10½	.11	.10½	.11	.10½	.11
150 vis., 4 color, 20-25 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10½
180 vis., 4 color, 22-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
180 vis., 3 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 3 color, 23-28 cold test	.12	.12½	.12	.12½	.12	.12½
200 vis., 4 color, 23-28 cold test	.11¾	.12¼	.11¾	.12¼	.11¾	.12¼
220 vis., 3 color, 25-30 cold test	.12	.12½	.12	.12½	.12	.12½
220 vis., 4 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
240 vis., 3 color, 25-30 cold test	.16	.16½	.16	.16½	.16	.16½
240 vis., 4 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
280 vis., 3 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 4 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.10½	.11	.10½	.11	.10½	.11
180 vis., 6 color, 23-28 cold test	.14½	.15	.14½	.15	.14½	.15
200 vis., 5 color, 23-28 cold test	.11½	.12	.11½	.12	.11½	.12
200 vis., 6 color, 23-28 cold test	.15½	.16	.15½	.16	.15½	.16
220 vis., 5 color, 25-30 cold test	.13½	.14	.13½	.14	.13½	.14
220 vis., 6 color, 25-30 cold test	.17½	.17¾	.17¼	.17¾	.17¼	.17¾
240 vis., 5 color, 25-30 cold test	.15	.15½	.15	.15½	.15	.15½
240 vis., 6 color, 25-30 cold test	.18¼	.18¾	.18¼	.18¾	.18¼	.18¾
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

Cylinder Stocks—						
180-200 vis., S. R green, 40-45 cold test	.09½	.10	.09½	.10	.09½	.10
190-200 vis., S. R green, 40-45 cold test	.08½	.09	.08½	.09	.08½	.09
170-190 dark green, 40-45 cold test	.07½		.07½		.07½	
600, E filtered	.21¾		.21¾		.21¾	
190-200 vis. @ 210 "D" Bright Stock	.36		.36		.36	
200-210 vis. @ 210 "E" Bright Stock	.31		.31		.31	
150 vis. @ 210 "D" Bright Stock	.32		.32		.32	
150 vis. @ 210 "E" Bright Stock	.38		.38		.38	
Waxes:						
124-126 White Crude Scale Wax	.04½	.04¾	.04½	.04¼	.04½	.04¾
PENNSYLVANIA—						
150, 3 color	.20		.20		.20½	
180, 3 color	.21¾		.22		.22½	
200, 3 color	.23¾		.24		.24½	
220, 3 color	.25½		.26		.26½	
600, steam refined	.18¾		.19		.20	
635, steam refined	.22½		.22½		.24½	
650, steam refined	.25½		.26		.26½	
600, Pennsylvania flash	.33		.33		.34	
630, Pennsylvania flash	.38		.38		.40	
*550, E filtered	.23		.23		.23	
*600, E filtered	.25½		.25½		.25½	
600, E filtered	.23¾		.23¾		.24½	
600, D filtered	.30½		.30½		.31	
550, E filtered	.22½		.22½		.22½	
550, D filtered	.25½		.25½		.25½	
Pennsylvania Bright Stock	.37½		.37½		.37½	
122-124 White Crude Scale Wax	.04⅞		.05½		.05½	
†124-126 White Crude Scale Wax	.05		.05¼		.05¼	

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.07	.08	.07	.08
No. 2 color, 100 vis., pale oil	.09½	.10½	.10½	.11½	.10½	.11½
No. 2 color, 150 vis., pale oil	.11	.12	.12	.13	.12	.13
No. 3 color, 200 vis., pale oil	.14	.15	.15	.16	.15	.16
No. 3 color, 300 vis., pale oil	.16	.17	.17	.18	.17	.18
No. 3½ color, 500 vis., pale oil	.18	.19	.19	.20	.19	.20
No. 3½ color, 750 vis., pale oil	.23½	.24½	.24½	.25½	.24½	.25½
No. 4½ color, 1200 vis., pale oil	.26½	.27½	.27½	.28½	.27½	.28½
No. 4 color, 2000 vis., pale oil	.30	.31	.31	.32	.31	.32
No. 2 plus color, 150 vis., pale filtered	.21½		.23½		.23½	
No. 2 plus color, 200 vis., pale filtered	.23		.25		.25	
No. 2½ minus color, 300 vis., pale filtered	.26½		.28½		.28½	
No. 2½ color, 500 vis., pale filtered	.30½		.32½		.32½	
No. 2½ color, 800 vis., filtered	.40½		.42½		.42½	
No. 5 to 6 color, 200 vis., red oil	.12½	.13½	.13½	.14½	.13½	.14½
No. 5 to 6 color, 300 vis., red oil	.14½	.15½	.15½	.16½	.15½	.16½
No. 5 to 6 color, 500 vis., red oil	.16½	.17½	.17½	.18½	.17½	.18½
No. 5 to 6 color, 750 vis., red oil	.21½	.22½	.22½	.23½	.22½	.23½
CALIFORNIA—						
130 pale, 2½-3 color	.12	.12½	.12	.12½	.12	.12½
200 vis., 2½-3 color	.15½	.16	.15½	.16	.15½	.16
300 vis., 3 -3½ color	.17	.17½	.17	.17½	.17	.17½
350 vis., 3½-4 color	.18	.19	.18½	.19	.18½	.19
400 vis., 3½-4 color	.20	.20½	.20	.20½	.20	.20½
Red Neutrals:						
200 vis., 4½-5 color	.14	.14½	.14	.14½	.14	.14½
300 vis., 5 -6 color	.15	.15½	.15	.15½	.15	.15½
400 vis., 5 -6 color	.17	.17½	.17	.17½	.17	.17½
500 vis., 4½-5 color	.20	.21	.20	.21	.20	.21
500 vis., 6 -6½ color	.18	.19	.18	.19	.18	.19
600 vis., 6½ plus color	.19	.19½	.19	.19½	.19	.19½

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	April 14	April 7	Mar. 31
U. S. Motor Gasoline, 58-60 437	.14	.15	.15
*Bunker Oil 14-16 Be.	1.80	1.80	1.80
*Diesel Oil, 28-30 Be.	2.35	2.35	2.70
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 32-36 Be.	.06¾	.06¾	.06¾
41-43 Kerosene prime white	.06	.06½	.06½

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline:	April 14	April 7	Mar. 31
58-60 Be. gravity, in cases	.29.15	.29.15	.29.15
U. S. Navy, in bulk	.15	.15	.15
Naphtha:			
60° F., 59-61 Be. gravity, in bulk	.17¾	.17¾	.17¾
60° F., 63-66 Be. gravity, in bulk	.19	.19	.19
60° F., 66-68 Be. gravity, in bulk	.20½	.20½	.20½
Kerosene:			
Standard white, 40-42 Be. grav., in bulk	.06½	.06½	.06½
Standard white, 40-42 Be. grav., in barrels	.13½	.13½	.13½
Standard white, 40-42 Be. grav., in cases	.16.9	.16.9	.16.9
Water white, 42-44 Be. grav., in bulk	.07½	.07½	.07½
Water white, 42-44 Be. grav., in barrels	.14½	.14½	.14½
Water white, 42-44 Be. grav., in cases	.17.9	.17.9	.17.9
†Lubricating Oils:			
Cylinder Stock, extra filtered, 600, barrels	.45	.46	.46
Cylinder Stock, light filtered, 600, barrels	.40	.41	.41
No. 1 white Neutral, .878 spec. grav.	.44	.44	.44
No. 1 Summer Black, .895 spec. grav.	.17	.20	.20
No. 5 Bright Stock, .897 spec. grav.	.47	.49	.49
Special "A" red oil, .897 spec. grav., 170 vis.	.20	.21	.21
No. 2 red oil, .903 spec. grav., 212 vis.	.21	.22	.22
No. 1 red oil, .905 spec. grav., 265 vis.	.22	.23	.23
Polar red oil, .906 spec. grav., 295 vis.	.23	.24	.24
Pale oil, "25", .899 spec. grav.	.21½	.21½	.21½
Pale oil, "28", .892 spec. grav.	.17	.17	.17
Paraffin Wax:			
120-122 a.m.p., per lb.	.06¼	.06¼	.06¼
125-127 a.m.p., per lb.	.06⅜	.06⅜	.06⅜
130-132 a.m.p., per lb.	.06¾	.06¾	.06¾
135-137 a.m.p., per lb.	.07½	.07½	.07½

†All lube prices in barrels.

LOS ANGELES EXPORT PRICES

	April 14	April 7	Mar. 31
Kerosene water white	.05½ .06	.05½ .06	.05½ .06
U. S. Motor gasoline, 54-56, 437 end point	.10½ .11	.10½ .11	.10½ .11

CRUDE OIL PRICES

April 13—Humble Oil & Refining Co. reduced the price of Grade A and Grade B coastal crude 25 cents a barrel.

April 14.—Standard Oil Co. of Louisiana reduced the price of Smackover crude below 25 gravity 20 cents a barrel.

Arkansas and North Louisiana

Caddo, 38° and above	$2.05
35° to 37.9°	1.95
32° to 34.9°	1.85
Below 32°	1.70
Homer, 35° and above	1.80
32° to 34.9°	1.70
31° to 32.9°	1.60
Below 31°	1.45
Haynesville, 33° and above	1.70
Below 33°	1.60
El Dorado, 33° and above	1.70
Below 33°	1.60
Bull Bayou, 38° and above	1.85
35° to 37.9°	1.70
32° to 34.9°	1.55
Cotton Valley	1.00
De Soto	1.90
Crichton	1.70
Bellevue	2.00
*Stephens, Ark.:	
Below 26°	1.40
26° and above	1.60
Smackover:	
Below 25°	.80
25° to 25.9°	1.10
26° to 26.9°	1.20
27° to 27.9°	1.25
28° and above	1.30

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek (Wyo.)	2.00
Salt Creek	1.60
Big Muddy	2.00
Mule Creek	1.50
Grass Creek (light)	2.15
Elk Basin	2.15
Lance Creek	2.15
Osage	2.15
Cat Creek (Mont.)	2.15
Sunburst (Mont.)	1.40
Lost Soldier	1.28
Greybull and Torchlight	2.00
Hamilton Dome	1.60
Hogback, N. Mex.	2.20

Lost Soldier and Lander based on contracts.

Oklahoma, Kansas, North and Central Texas

Prairie Oil & Gas Co. and other major purchasing companies, except as noted:

Below 30°	1.35
30° to 32.9°	1.55
33° to 35.9°	1.80
36° to 38.9°	2.00
39° to 41.9°	2.25
42° and above	2.35
Sinclair Crude Oil Purchasing Co.—	
39° to 41.5°	2.25
41.6° and above	2.35
Magnolia Petroleum Co.:	
Below 28°	1.00
28° to 30.9°	1.35
31° to 32.9°	1.55
Corsicana light	.200
Corsicana heavy	1.00
Mexia and Wortham	2.00
Humble Oil & Refining Co.	
Powell, Currie, Richland	2.00
Mexia and Wortham	2.00
Moran crude:	
Below 30° gravity	1.35
30° to 32.9°	1.55
33° to 35.9°	1.80
36° and above	2.00

Ranger and North Texas, same as Prairie.

Gulf Coast

Grade A	1.75
Grade B	1.50
Luling (based on contracts) 90c and	1.15
Laredo (Magnolia Petroleum Co.)	.85
Rockdale-Minerva (Milam County)	1.25
Calliham (Live Oak-McMullen)	1.15
Webb, Jim Hogg, Zapata	1.00
*High Island	1.20

*Posted by Sun Oil Co.

***Somerset**

Below 30°	1.25
30° to 32.9°	1.35
33° to 35.9°	1.80
36° to 38.9°	1.95
39 to 41.9°	2.10
42° and above	2.35

*Posted by Grayburg Oil Co.

California

14° to 19.9°	1.25
20° to 20.9°	1.27
21° to 21.9°	1.30
22° to 22.9°	1.33
23° to 23.9°	1.36
24° to 24.9°	1.40
25° to 25.9°	1.44
26° to 26.9°	1.48
27° to 27.9°	1.52
28° to 28.9°	1.56
29° to 29.9°	1.60
30° to 30.9°	1.64
31° to 31.9°	1.68
32° to 32.9°	1.72
33° to 33.9°	1.76
34° to 34.9°	1.80
35° and above	1.85
Rosecrans-Athens Field, only:	
Below 35.9° gravity, same as other fields.	
36° to 36.9°	1.92
37° to 37.9°	2.00
38° to 38.9°	2.08
39° to 39.9°	2.16
40° to 40.9°	2.24
41° to 41.9°	2.32
42° and above	2.40

Eastern States

Penna Grade Oil in New York Transit Lines	3.65
Bradford District Oil in National Transit Lines	3.65
Penna Grade Oil in National Transit Lines	3.55
Penna Grade Oil in Southwest Pa. Pipe Lines	3.55
Penna Grade Oil in Eureka Pipe Line Lines	3.50
Penna Grade Oil in Buckeye Pipe Lines	3.40
Cabell Grade Oil in Eureka Pipe Line Lines	2.20
Corning Grade Oil in Buckeye Pipe Line Lines	2.10
Somerset Medium Oil in Cumberland Pipe Line Lines	2.30
Somerset Light Oil in Cumberland Pipe Line Lines	2.45
Ragland Grade Oil in Cumberland Pipe Line Lines	1.20
Lima	2.23
Wooster	2.15
Illinois	2.02
Indiana	2.03
Princeton	2.02
Plymouth	1.55
Waterloo	1.10
†Oil Springs, Canada	2.95
†Petrolia, Canada	2.88
*Western Kentucky, 36° and above	2.05
*Western Kentucky, 33° to 35.9°	1.95
*Western Kentucky, 32.9 and below	1.85
Cumberland, Barren and Monroe Counties (Kentucky), (Paragon Development Co.)	2.45

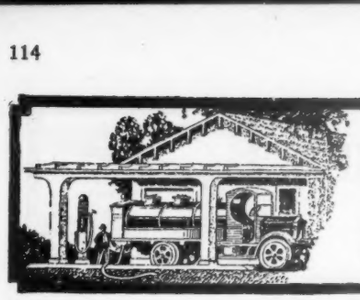
†Plus Government bounty of 26½c.

*Prices for Warren, Allen, Hancock, Simpson and Ohio Counties by Indian Refining Co.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	1.35
†Panuco (f.o.b. Mexican ports)	1.25
Tuxpam (New York)	1.90
Panuco (New York)	1.76

*Plus 33.00c tax. †20.00c tax.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, April 14

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Chicago Dist.—				
†100 gals. or more	18.0	21.0	...	12.0

Tank wagon prices on April 19, 1922; g. up 1¼c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c, k. down 1c; Oct. 10, g. down 2c; Oct. 21, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 30, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c; Nov. 10, g. down 1.4c; Dec. 29, g. up 2c; Jan. 12, 1924, g. up 2c, k. up 1c; Feb. 5, g. up 2c, k. 1c; July 18, g. down 1c; July 30, g. and k. down 1c; Sept. 12, g. down 2c; Jan. 23, 1925, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Jan. 26, g. up 1c; Jan. 31, g. up 1c; Feb. 12, g. up 2c, k. up 1c.

Decatur, Ill.	18.2	20.2	...	12.5
East St. Louis	17.1	19.35	...	11.6
Joliet	18.4	20.4	...	12.7
Peoria	18.2	20.2	...	12.5
Quincy	18.2	20.2	...	12.3
Davenport, Ia.	18.5	20.5	...	12.9
Des Moines	18.5	20.5	...	12.9
Keokuk	18.5	20.5	...	12.9
Sioux City	18.0	20.0	...	12.5
Duluth, Minn.	19.5	21.5	...	13.6
Minneapolis	19.2	21.2	...	13.6
La Crosse, Wis.	21.2	23.2	2.0	13.4
Milwaukee	20.1	22.1	2.0	12.3
Madison	20.3	22.3	2.0	12.5
Detroit, Mich.	20.8	22.8	2.0	13.2
Grand Rapids	20.7	22.7	2.0	13.1
Saginaw	20.9	22.9	2.0	13.3
Evansville, Ind.	21.0	23.0	3.0	12.5
Fort Wayne	21.4	23.4	3.0	12.9
Indianapolis	21.2	23.2	3.0	12.7
South Bend	21.4	23.4	3.0	12.9
Fargo, N. D.	20.9	22.9	1.0	15.6
Huron, S. D.	23.0	25.0	3.0	14.1
Sioux Falls	20.5	22.5	3.0	13.6
*Kansas City, Mo.	20.9	22.9	3.0	11.3
*Springfield	20.8	22.8	3.0	12.2
*St. Louis	19.6	21.9	2.5	12.0
*St. Joseph	20.0	22.0	2.5	11.9
Wichita, Kans.	17.8	19.8	...	10.8
Bartlesville, Okla.	19.9	21.9	3.0	10.9

*State tax is 2c. Remainder is city tax.

†Tank wagon price on less than 100 gallons, 19.0.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Newark, N. J.	17.0	19.0	..	12.5
Atlantic City	17.0	...	..	12.5
Annapolis, Md.	20.0	...	2.0	11.5
Baltimore	19.0	21.0	2.0	11.0
Cumberland	20.0	22.0	2.0	12.0
Washington, D. C.	19.0	21.0	2.0	12.0
Norfolk, Va.	21.0	23.0	3.0	13.0
Petersburg	21.0	...	3.0	13.0
Danville	21.0	...	3.0	13.0
Richmond	21.0	23.0	3.0	13.0
Roanoke	21.0	23.0	3.0	13.0
Keyser, W. Va.	20.0	...	2.0	13.0
Charleston	19.0	21.0	2.0	13.0
Parkersburg	19.0	21.0	2.0	13.0
Wheeling	19.0	21.0	2.0	13.0
Charlotte, N. C.	22.0	24.5	4.0	14.0
Hickory	22.0	...	4.0	14.0
Mt. Airy	22.0	...	4.0	14.0
Salisbury	22.0	...	4.0	14.0
Charleston, S. C.	23.5	26.0	5.0	14.5
Columbia	23.5	26.0	5.0	14.5

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
*Pittsburgh, Pa.	19.0	24.0	...	14.0
*Philadelphia	19.0	24.0	...	14.0
*Scranton	19.0	24.0	...	14.0
**Allentown	19.0	24.0	...	14.0
*Altoona	19.0	24.0	...	14.0
*Erie	19.0	24.0	...	14.0
Dover, Del.	21.0	24.0	2.0	14.0
Wilmington	21.0	24.0	2.0	14.0
Springf'ld, Mass.	20.0	24.0	...	13.0
Worcester, Mass.	20.0	24.0	...	13.0
Boston	20.0	24.0	...	11.0
Providence, R. I.	20.0	24.0	...	13.0
Hartford, Conn.	21.0	25.0	1.0	12.0
New Haven Conn.	21.0	25.0	1.0	13.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
New Orleans	18.5	20.5	2.0	11.0
Alexandria	18.5	20.5	2.0	12.0
Baton Rouge	17.0	19.0	2.0	10.5
Lake Charles	18.5	20.5	2.0	12.0
Shreveport	18.5	20.5	2.0	11.0
Memphis, Tenn.	19.0	21.0	3.0	13.0
Chattanooga	20.5	22.5	3.0	13.5
Knoxville	21.5	23.5	3.0	14.5
Nashville	20.5	22.5	3.0	13.5
Bristol	21.0	23.0	3.0	12.5
Little Rock, Ark.	21.0	23.0	4.0	10.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Atlanta, Ga.	24.0	27.0	3.0	13.0
Augusta	24.0	27.0	3.0	15.0
Macon	24.0	27.0	3.0	14.5
Savannah	22.0	25.0	3.0	13.0
Birmingham, Ala.	22.0	25.0	2.0	14.5
Mobile	21.0	24.0	2.0	12.5
*Montgomery	23.0	26.0	3.0	15.5
Clarksdale, Miss.	22.0	25.0	3.0	12.0
Jackson	22.0	25.0	3.0	10.0
Natchez	21.5	24.5	3.0	11.5
Vicksburg	21.5	24.5	3.0	11.5
Jacksonville, Fla.	22.0	25.0	3.0	13.0
Miami	24.0	27.0	3.0	14.5
Pensacola	22.0	25.0	3.0	13.5
Tampa	22.0	25.0	3.0	13.0
Lexington, Ky.	22.0	25.0	3.0	14.0
Covington	20.0	23.0	3.0	14.0
Louisville	22.0	24.0	3.0	12.0

*In addition to the State tax of 2 cents on gasoline. Montgomery has city tax of 1 cent on gasoline and ⅛ cent on kerosene.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Dallas, Texas	17.0	21.0	1.0	12.0
Fort Worth	17.0	21.0	1.0	12.0
Houston	17.0	21.0	1.0	12.0
San Antonio	17.0	21.0	1.0	12.0
El Paso	19.0	22.0	1.0	13.0
Muskogee, Okla.	18.5	21.5	3.0	12.0
Oklahoma City	19.5	22.5	3.0	12.0
Tulsa	18.5	21.5	3.0	11.0
Ft. Smith, Ark.	21.0	24.0	4.0	12.0
Little Rock	21.0	23.0	4.0	10.0
Texarkana	19.0	22.0	1.0	12.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Casper, Wyo.	21.5	23.5	2.5	13.0
Cheyenne	23.0	25.0	2.5	14.5
Albuquerque, N. M.	26.5	29.5	3.0	16.5
Salt Lake, Utah.	24.0	26.0	3.5	18.0
Denver, Colo.	21.0	23.0	2.0	14.5
Pueblo	21.0	23.0	2.0	14.5
Butte, Mont.	23.0	25.0	2.0	16.0
Helena	25.0	27.0	3.0	17.0
Boise, Idaho	24.5	26.5	3.0	20.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Albany, N. Y.	20.0	....	...	13.0
*New York	20.0	....	...	13.0
Buffalo	20.0	....	...	12.0
Rochester	20.0	....	...	13.0
Syracuse	20.0	....	...	13.0
Boston, Mass.	20.0	....	...	13.0
Providence, R. I.	20.0	....	...	13.0
Augusta, Me.	21.0	....	1.0	13.0
Manchester, N. H.	22.0	....	2.0	13.0
Burlington, Vt.	21.0	....	1.0	13.4

*Price in steel barrels.

Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

PACIFIC COAST DISTRICT

Standard Oil Co. of California

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
San Francisco	17.0	20.0	2.0	15.5
Los Angeles	15.5	18.5	2.0	15.5
Fresno	17.5	20.5	2.0	19.5
Reno, Nev.	20.5	23.5	2.0	19.0
Portland, Ore.	18.0	21.0	3.0	16.5
Seattle, Wash.	17.0	20.0	3.0	16.5
Tacoma	17.0	20.0	3.0	18.5
Spokane	21.0	24.0	3.0	20.5
Phoenix, Ariz.	23.0	26.0	3.0	21.5

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
All Ohio points.	18.5	20.5	...	15.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Service station	Incids tax of	Kero. Tank wagon
Omaha	18.0	20.0	2.0	12.5
Crawford	21.0	...	2.0	13.25
McCook	21.75	23.75	2.0	14.0
Norfolk	20.75	23.75	2.0	13.0
North Platte	21.75	23.75	2.0	13.75
Scotts Bluff	21.75	23.25	2.0	13.25

TANK WAGON PRICE CHANGES

March 31—Magnolia Petroleum Co. reduced the tank wagon and service station prices of gasoline ½ cent at Fort Smith, Ark.

April 7— Standard Oil Co. of Indiana reduced the tank wagon and service station prices of gasoline 1 cent a gallon at Sioux Falls, S. D.

April 8—Standard Oil Co. of Louisiana reduced the tank wagon price of kerosene 1 cent a gallon in Louisiana, Tennessee and Arkansas except in New Orleans, where the price was cut 1½ cents, and Shreveport, 2 cents.

April 9—Magnolia Petroleum Co. reduced the tank wagon and service station prices of gasoline and the tank wagon price of kerosene 1 cent at Little Rock, Ark.

EXPECTED EXPORT BUYING AIDS MARKET

(Continued from Page 20)

A factor which probably is having more weight with the Standard of Indiana than any other condition, lies in the fact that there is no immediate prospect of a general reduction in the posted prices of Mid-Continent crude. The large flush production of low gravity Smackover crude previously mentioned is not expected to force price reductions in the higher gravity crudes found in other fields. The crude situation in the Mid-Continent is admittedly easier than it was but the fact that Mid-Continent refiners have made very little reduction in their crude runs to stills, with the major buyers still drawing on their storage of high gravity crude, does not point to any immediate shift in crude schedules.

There can be little doubt what will happen if the market fails to respond to the improved export and domestic demand and continues to decline. Jobbers and the larger integrated distributors will undoubtedly lower tank wagon prices. In this connection the bulletin previously mentioned also said in part: "In our opinion two weeks will be as long as we can possibly wait for spot markets to prove that they do not at the present time represent the collective and sound judgment of the industry.

Other Products

There was also optimism in regard to kerosenes. As has been reported in these columns for several weeks, the movement of kerosene from Oklahoma refineries has been strong. Prices slipped because stocks were relatively high and because there was a general feeling of depression among refiners. The heavy movement has reduced stocks to a minimum at several plants and in a few instances refiners advanced their prices one-eighth to one-fourth cent during the week.

Natural gasolines are still sluggish but prices are practically the same as last week. The big buyers and sellers who keep a close check on the statistical situation of the natural gasoline industry state that stocks are light in parts of the Mid-Continent. This leads to the conclusion that the manufacturers will be in a position to take advantage of any improvement in the straight run gasoline market which if it materializes will bring a better demand from the refiners for their products.

Gasoline and Naphtha

Outside of the proposed New Jersey purchase the principal development in the gasoline and naphtha situation was the heavy movement of the 56-58, 450 gasoline. This movement, caused by jobbers filling their storage in anticipation of the summer demand for a lower gasoline, perhaps was also stimulated by low prices offered on this grade. Quantities of this gasoline sold as low as 9 cents during the past week although Tuesday most of this price material was off the market, which settled to 9¼ to 9½ cents.

Because of little or no demand for the higher gravity gasolines, the market on these grades continued to slump. The prices on these ranged from 11 to 11¼ cents on the 60-62, 400 grade to 12⅝ to 13 cents on the 68-70, 350. The 64-66, 375 gasoline was quoted at 12-12¼ cents. Although there was little movement of 50-52, 450 (naphtha), the price held at 9¼ to 9½ cents, principally because refiners are not disposing of this product, choosing to use it themselves in the making of blends and straight run products.

The Standard of New Jersey purchased around 100 cars of 64-66, 375 on the spot market in addition to its contract purchases. The reported price on this material which was apparently placed to relieve refiners of distress material was lightly below the present market. The company also reduced the export price at Baton Rouge on which their contracts for 64-66, 375 are based from 16 to 15½ cents. These contracts now net the refiners in Oklahoma 13.05 cents and 13.15 cents in North Texas.

Kerosene and Distillates

The better demand and movement of kerosene, all grades, is continuing. It is strengthening the market but so far has caused little actual advance in prices. The 42-44 water white kerosene was quoted at 4¼ to 4½ cents a gallon Tuesday. The 41-43 grade was bringing 4 to 4⅜ cents although several refiners were asking ½-cent above these quotations. The 40-41 prime white kerosene was still selling for 3¾ to 4 cents.

There was little activity among distillates and the market continued weaker although this was not reflected in any actual price changes. What little 36-38 distillate moved still sold for 3½ to 3¾ cents. The 38-40 straw grade hung at 3⅜ to 3½ cents.

Natural Gasoline and Blends

While there were no changes in the natural gasoline market, blended products continued to weaken with a drop in price of a half-cent noted during the past week. All grades of blends were quoted at 9¼ to 9½ cents Tuesday. Most dealers in natural gasoline could see nothing except a better market in the near future. They reported all natural gasoline hard to find, while one buyer found it impossible to get any Grade B at all in Texas. Grade A and Double A still were quoted at 9 to 9¼ cents, Grade B and Double B at 8 cents, and C at 7 to 7½ cents.

Fuel and Gas Oil

The manner in which prices of fuel oils have held is the talk of the refined market. The 24-26 fuel oil was moving freely Monday and Tuesday for $1.06 to $1.07½. Most sellers refused to quote at all under $1.10. There was no difference between this grade of fuel and the 22-26 but the fuel below 22 gravity brought $1 to $1.05. The 28-30 fuel still was quoted at $1.15 to $1.20 although there was no unusual buying. Purchases for future delivery were generally placed at lower prices.

Gas oil (32-36), which was weak, failed to reflect any material change in price, being quoted at 3 to 3½. This price held despite the reports of some unusually cheap material in North Texas.

Lubs and Wax

Wax, which has been somewhat of a drug on the market for sometime, came to life during the past week when a number of fairly large orders were placed with New York buyers. Wax took a jump in price, the product selling for 4½ to 4¾ cents during the week. This was a three-eighths cent boost over the quotation of the week previous. There were no changes in neutrals, cylinder and bright stocks with a fairly good movement continuing.

SINCLAIR OPALINE MOTOR OIL

REG. U.S. PAT. OFF.

YOU have that feeling of satisfaction that comes with doing your neighbor a good turn, when you sell him Sinclair Opaline Motor Oil—You know its performance will bring him back.

Sinclair Opaline Motor Oil *fits the degree of wear* in his engine.

SINCLAIR REFINING COMPANY

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Sinclair Oil Bldg., 45 Nassau St.
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22nd and Rockwell Streets
Telephone: Crawford 2000

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SINCLAIR OILS

Jobbers Start National Advertising

Complete Arrangements at Meeting of National Petroleum Marketers Association. Condemn Practice of Giving Away Tanks and Pumps.

By C. O. Willson

CHICAGO, April 10.—Independent jobbers assembled in session at the Congress Hotel practically completed plans for the inauguration of a national advertising program through which they expect to obtain nation-wide recognition for the products they sell in competition with major oil interests who, through the same medium, have made their products known to every user of gasoline and lubricating oil. The action taken in regard to national advertising featured the three-day "Industrial Conference" of the National Petroleum Marketers Association which closed here last night.

Although there are minor details yet to be arranged, the principal requisite of ample finances was arranged for and it is certain that the next few weeks will see the start of the advertising program considered by the association to be the most important feature of its varied program looking to the betterment of the collective position of the independent jobbing branch of the oil industry.

Other problems of interest to the jobbers were discussed during the business sessions of the three days. Although some new angles to the problems were developed the actions taken were largely a repetition of that of previous meetings of the association.

The conference, which L. V. Nicholas, president of the association, termed "the most successful ever held in point of interest and constructive action," was attended by approximately 700 registrants, composed principally of jobbers from all parts of the country.

Although pessimism was apparent in regard to the probable price of gasoline over the remainder of the spring and summer months, jobbers with few exceptions, reported a very satisfactory business since the last meeting of the association, held in Cleveland, Ohio, last November.

In addition to the business sessions, two entertainment features were provided for the conference, the Graver Frolics, at which the Graver Corp. of Chicago, was host, was given Tuesday night and the annual banquet Wednesday night. Both functions were largely attended.

Forty companies had exhibits in the Gold Room of the hotel. The exhibits included all types of pumps and other equipment used by jobbers at bulk and service stations.

National Advertising

Advertising which was to be national in scope has been under consideration by the association for three years. During this period the organization has been perfected and the idea tried out in a small way through local advertising by concerns who are to become a part of the national plan. The advertising branch of the association is known as the Independent Oil Men of America. Membership in this branch is separate from the association. It is at the present time composed of jobbers whose qualifications for membership are passed on by a board of trustees. Certain restrictions are placed on the membership, the principal one the requirement that the jobber must obtain the products he sells from a strictly independent source of supply.

The advertising branch adopted a distinctive insignia three years ago and this has been used extensively by concerns in their newspaper, billboard and other forms of advertising.

The national advertising program will first start in the Saturday Evening Post. The distinctive insignia will be featured in this advertising and the public made acquainted with the organization supporting it. Later it is planned to advertise the brand or makes of gasoline and lubricating oils which the members of the association will sell.

HIGH POINTS AT INDUSTRIAL CONFERENCE OF N. P. M. A.

Complete plans for national advertising of products sold by independent jobbers. Distinctive names for gasoline and lubricating oils to be adopted.

Urge support of independent refiners who do not have own stations.

Propose model statute for gasoline road tax.

Condemn practice of giving away pumps and tanks and paying rentals to aid tank wagon sales. Favor discontinuance of practice of selling to country customers in small dumps at tank wagon prices.

Urge more general support of collective buying department of association.

The trustees at the present time have under consideration trade marks for the different grades of gasoline. The insignia shown at the convention consisted of a series of different colored hats. It was suggested that the red hat cover all gasoline meeting 58-60 U. S. Motor gasoline requirements and usually sold in competition with Red Crown of the Standard companies and other well known brands of gasoline. The green hat and other colors would refer to different grades of gasoline.

The advertising branch also expects to agree on a distinctive name for the lubricating oils sold by the membership. The association has had this matter under consideration for some time along with the problem of specifications for lubricating oils and expects to submit a definite proposition to the membership within a few weeks. The membership in the advertising branch at the present time consists of approximately 175 companies. It was stated that this membership stretched from coast to coast and from Canada to the Gulf. A fund in excess of $100,000 has been underwritten by the members and this will start the national campaign.

Discussion of the association's plans for national advertising brought forth more enthusiasm than any other subject brought to the attention of the conference. The obvious result which the jobbers hope to obtain is continuity in the same sense as it is obtained by the largest oil interests. It was predicted that it would quickly attract other jobbers to the association and increase sales especially from tourists who are at the present inclined to patronize well advertised brands of gasoline when away from their home communities.

Industrial Problems

Under the subjects "Is our industrial house in order and if it is not, what steps must we take to put it in order?" and "Can we afford to give business to refinery sources of supply who are building their own stations and becoming direct competitors?" several matters of general interest to the industry were discussed.

The discussions terminated in two resolutions which were unanimously supported as they have been at previous meetings of the association. In the first resolution it was recommended that when the margin between what the jobber buys at and that at which he sells becomes too large, he reduce his selling price to the point which will assure him a fair price. This action was to be taken regardless of the attitude of the larger integrated oil companies.

In the second resolution it was declared to be the sense of the association that independent jobbers should buy only from refiners who do not have their own stations and are therefore not potential competitors.

The discussions centering around these two resolutions clearly indicated that there was no immediate danger of either being carried out by a majority of the jobbers present. The position of jobbers in regard to prices and their sources of supply varied so in different sections of the country that collective action at this time would be impossible. The resolutions therefore amounted to nothing more than a reiteration of principles for which the national association has stood for several years.

In the discussion, jobbers from the Middle West expressed alarm at the present wide margin between the spot gasoline market in the Mid-Continent area from which they buy and the prevailing tank wagon and service station prices in their distributing areas.

Fear was expressed that the present margin would again invite interference by State and city officials as it did in 1923 and 1924 and also bring a siege of local price wars which all were anxious to avoid. Some reductions in tank wagon prices have already been necessary in South Dakota. Jobbers there said that the successor to Ex-Governor McMaster, who gained considerable notoriety two years ago in lowering gasoline prices, had reduced prices at the State owned stations. The present governor, it was said, plans to publish in the papers of the State, the price at which gasoline is available from the refiners, using this further method of keeping down prices. No explanation was to be made regarding freight costs and overhead expenses incidental to marketing.

Discussion on Margin

In some other sections it was brought out that the jobbers are operating at the present time on a very narrow margin. There was as usual some disagreement as to what constituted a fair margin on which to operate in gasoline distribution. A majority seem to feel that a 5-cent spread between the open market refinery price plus freight and the tank wagon price at point of destination should be the maximum. Several advocated a 4-cent spread under the tank wagon or 6 cents under the service station. One jobber expressed the opinion that they should operate on a 3-cent margin until conditions in the retail markets become more settled.

This plan of keeping the proper relationship between the buying and selling price was the only answer in the opinion of the jobbers to the questions "How can we best answer those who attack our business?" The public, it was declared, was not interested in excuses but was concerned only in buying its supplies at the lowest possible price.

Demoralized Markets

"Integrated oil interests who have their own production, refining and distribution are more responsible for demoralized markets than the independent elements," according to President Nicholas who made the principal plea for the jobbers to support the independent refiner who was not engaged in the wholesaling and retailing of the products he manufactures. Attacking what he said was oftentimes an unjustified retail market structure Mr. Nicholas said it was the dumping by these large companies of surplus gasoline which they did not need for their own distribution that brought demoralized markets.

He contended that whenever jobbers give their business to a refiner with his own distribution they served to strengthen the position of the concern which collectively speaking was their competitor and at the same time weakened the position of the refiner who depended on them to distribute their plant output. Mr. Nicholas at the same time defended the spot refinery price on gasoline as an accurate gauge of market conditions and the price on which wholesale and retail prices should depend. He defined it as more than the market established by the independent refiner stating that it was the "collective expression of a great industry of the replacement value of that product."

Mr. Nicholas branded as "senseless" the feeling on the part of many independent producers, refiners and jobbers that they must become a part of some integrated organization if they are to survive. He pointed to conditions within the industry during the past two years as proof of his contention that independent divisions could operate just as profitably as their large integrated competitors through collective thinking and action.

Gasoline Road Taxes

Although the association did not change its attitude of the past in not opposing gasoline taxes, considerable alarm was expressed at the Tuesday meeting when this problem was discussed, regarding the trend to increase the tax rate to as high as 5 cents a gallon, the present tax in South Carolina. This organization, as several other oil associations have done, has taken the position that it would do harm rather than good to the industry to oppose the taxes which are desired by their customers and paid by them.

It was suggested that if the tax was to be opposed that the oil interests work through some organization outside the industry. The success of the Illinois jobbers was pointed out in this connection. Oil jobbers in that State gave their support to the automobile association which opposed a gasoline tax and which up to the present time has been successful in preventing a law being passed. It was said however that in most States a majority of the consumers of gasoline were in favor of the tax and it was useless to oppose them.

The main concern of the jobbers it was agreed was to secure the passage of law which protected them against loss in making their reports. A committee of which J. M. Wolf, Southern Minnesota Oil Co., Fairmont, Minn., was chairman made several recommendations in regard to provisions which would protect the jobber in any law providing for the tax. This committee recommended that the tax be levied on actual sales and not on purchases. If this was impossible the law should allow a 3 per cent depreciation when based on purchases covering evaporation and other losses. The tax rate as nearly as possible should correspond with rates in effect in adjoining States in order to avoid trouble along the borders which makes it possible for jobbers in one State to undersell those in adjoining states due to a lower tax rate.

If exemptions are to be allowed the claims for refunds should be handled by

the County Commissioners or some other county official. All funds derived from the tax should be used in the construction and maintenance of improved roads.

One interesting phase of this discussion had to do with losses from evaporation. Based on the data given by several jobbers the loss in evaporation from the time the gasoline is unloaded at the bulk station until it is placed in the tank of the consumers varies from one-half to 1 per cent to 3 per cent. The discussion on this matter became somewhat heated, those having the large evaporation loss claiming the remainder did not keep accurate account of their losses. It was brought out that the difference in temperature between the points of origin and destination oftentimes accounted for a substantial part of the shrinkage in volume.

Unethical Practices

Following its usual custom the association by resolution condemned the practice of giving away pumps and tanks and paying rents to garages and other curb dispensers to increase tank wagon sales. This practice it was declared in many instances amounted to rebating. Several speakers attempted to fasten the blame for this practice on the Standard and other large companies. Other jobbers conceded that the practice was not confined to any particular class of distributors.

M. R. Baskerville, of the Codington County Oil Co., Watertown, S. D., who took a prominent part in all the discussions, on Thursday made a plea for the discontinuance of the practice of selling country customers in small dumps at tank wagon prices. He contended that this practice was obviously unfair to the customer who bought at the service station at a price, generally 2 cents higher than the tank wagon quotation. The practice also antagonized the jobbers' wholesale customers such as garages who paid the same price as the country customer. Mr. Baskerville's position was unanimously supported by the other jobbers.

Collective Buying

H. F. Brownell of the Brownell Corp., Sioux Falls, S. D., in a well received address on Wednesday asked for more general support of the Collective Buying Department of the association. This department was started shortly after the first of the year and, according to a report made later by Mr. Nicholas, is handling a constantly increasing volume of business. The agency charges one-eighth cent for handling sales, this covering the overhead of the department.

Mr. Brownell declared that he had come to the conclusion that in the principle of collective buying lay the solution of practically all the problems of independent jobbing branch of the industry. He declared that it afforded the means through which the jobbing industry acting collectively could properly support the strictly independent refiner who makes possible their existence. He also said it would tend to stabilize the markets.

State Jobbers Associations

CHICAGO, April 10.—Officers of State jobbers' associations in attendance at the three day Industrial Conference of the National Petroleum Marketers' Associations took advantage of the opportunity to hold two luncheons at which they discussed problems having to do with State associational work. Methods used in obtaining new members, legislative work and field secretary activities were among the subjects discussed.

The following president and secretaries were in attendance: Minnesota, J. M. Wolf, president and Paul Hadlick, secretary; Michigan, H. H. Ragle, president, P. R. Kempf, vice president and James A Gilmore, secretary; Missouri, H. G. James, president and George S. Allee, secretary; Iowa, M. L. Long, Secretary; Kansas, A. W. Long; Illinois, F. A. Muench, president and J. B. Kellym, secretary; Wisconsin, Ray E. Andrews, president and R. A. Overholzer, secretary; Texas, R. N. Mullen, secretary; Indiana, W. H. Trimble, president; South Dakota, F. H. Buehler, president; Ohio, W. C. Hughes, secretary; New England, Fred E. Bergfors, Quincy, Mass.

Mr. Buehler presided at the meetings.

BUS ADOPTED BY TROLLEY LINES IN KANSAS CITY, DENVER AND EAST

KANSAS CITY, Mo., April 13.—Another step in the trend to a greater utilization of petroleum and its products was taken here with the granting of a franchise to the receivers of the Kansas City Railway Co. to operate a bus line system to start with 63 busses. The receivers have 60 days in which to accept or reject the franchise.

Establishment of bus service in Kansas City is taken to mean that gasoline is growing in favor in the transportation world as the most practical and economical means of power.

The proposed franchise would authorize the receivers of the street railway company to operate at least 15-minute bus service on nine line in the city. The franchise is for three years. Both single and double deck buses will be used.

DENVER TO VOTE ON BUS

DENVER, Colo., April 13.—The first of the new Denver passenger buses, which will be operated on local streets in conjunction with the Tramway system if the people adopt the franchise proposal of the Bus Transportation Co. at the municipal election May 19, has arrived here.

Plans for the operation of the bus system were outlined by Ernest Stenger, receiver for the Tramway, under which the bus company is a subsidiary. Ten buses, each with a capacity of 20 persons in addition to the driver, will be put in operation within six months after the election, if the franchise is granted, while 40 more will be added during the following four and one-half years.

The greatest advantage of buses for transportation, he said, is the elasticity they permit as against Tramway rail lines. For use as extensions and feeders to the street car lines, he declared, buses have the advantage of representing a smaller original outlay and permit easy adjustment to conditions. The plan is to put buses on the most favorable routes and then expand as experience indicates.

Although two of the proposed lines would run downtown, it is planned to center the bus operation largely to the outskirts, Mr. Stenger said, to augment street car service in outlying sections and to establish crosstown connections.

BUS TO REPLACE TROLLEY

NEW ROCHELLE, N. Y., April 13.—Substitution of buses for surface cars on several lines of the Third Avenue Railway system was foreshadowed when William B. Wheeler, assistant superintendent, applied to the New Rochelle city officials for bus franchises.

If the application is granted, the company will start bus lines to connect New Rochelle with the Pelhams, Mount Vernon and Eastchester, with terminals at North Avenue and Huguenot Street. The New Rochelle city officials regard favorably the proposal to substitute bus lines for the trolley lines.

TULSA'S TRAFFIC PROBLEM

In Tulsa the two electric railways have been unable to make headway owing to jitney competition. The Oklahoma Union Railway Co. has recently countered with new motor bus service between the business and residential sections of the city and extensions are being considered which it is expected, will make the Oil Capital a model for gasoline propelled transportation.

CLOSED CAR SWELLING GASOLINE DEMAND

(Continued from Page 22)

market. Henceforth the demand will be spread more generally over all months of the year, in winter as well as in the spring and summer months."

The year to year increase in gasoline consumption has been due to the increase in number of motor vehicles. This has made possible the tremendous development in the oil industry. It is agreed, however, that possibly in the very near future the domestic demand at least for automobiles will reach the saturation point or at least decrease to the point where the additional demand for gasoline will be of little consequence if it is dependent solely on the number of vehicles.

It is apparent, however, that if through change in design these motor vehicles are more generally used throughout the year, then the oil industry might continue to expect a continued large increase in the demand for gasoline and lubricating oils through the larger consumption per car. This will undoubtedly result through the greater utilization of closed cars, buses and trucks. Although the average automobile salesman will pass quickly over this point, there is also considerable evidence to support the contention that the gasoline consumption is greater per mile with the closed cars than with the open cars. Closed cars are heavier and offer more resistance to air and this requires more motor fuel both for power and lubrication. This from the standpoint of gasoline consumption is important since it will also tend to offset the trend toward less consumption per car brought about by improvements in motor design in recent years.

Uniform Consumption

Of greater importance than increased total consumption is the fact that closed cars mean a more even distribution of demand throughout the year. As in the case of the automobile manufacturer it will serve as a market stabilizer by making it possible for the oil industry to market its principal product with the same uniformity that the crude product is brought out of the ground and manufactured at the refinery.

The effect of this shift in the manufacture of motor vehicles is already apparent in the oil industry. Practically every retailer of gasoline will support that statement. Unfortunately, however, no reports are available which accurately reflect this situation. The Bureau of Mines reports are generally taken as the barometer of gasoline consumption but their figures are based on deliveries by refiners rather than actual sales to consumers.

The following table gives the monthly percentage of gasoline shipped by refiners based on the Bureau of Mines for the entire United States:

	5 Yr. Av. Ending 1923	1924
January	5.93	6.4%
February	5.37	5.1
March	6.72	6.1
April	7.19	7.8
May	8.83	8.6
June	9.55	8.8
July	10.43	10.1
August	10.87	10.6
September	9.98	9.2
October	9.44	9.6
November	8.29	8.9
December	7.40	8.5

This table in a general way shows the trend toward more uniform gasoline consumption although based on deliveries by refiners. From November 1 to May 1, for the five year period ending with the year 1923, 40.9 per cent of the gasoline for the year was delivered. In 1924 for the same six month period the deliveries increased to 42.8 per cent.

Deliveries by Season

Deliveries by refiners are often times influenced by market conditions which cause them to dump large quantities on the jobbers regardless of price. Weather conditions during one month do not always correspond to the same month of the previous year and this also will make a difference in the monthly percentages. Both these causes serve to emphasize the importance of closed cars in use in all kinds of weather.

In several States it is possible to obtain a more accurate comparison from reports compiled from the gasoline tax reports. In Nebraska last year 12 per cent of the total gasoline consumption for the year was in November while in November of 1923 only 8.4 per cent. Comparisons for other months are as follows: January, 1924, 7.3 per cent; January, 1923, 8.1 per cent; February, 1924, 7.6 per cent; February, 1923, 6.5 per cent; December, 1924, 9.1 per cent; December, 1923, 7.8 per cent.

In many of these States, however, the gasoline tax has not been in effect long enough to give an accurate basis of comparison.

SMACKOVER DEEP SAND RICH IN CRUDE OIL

(Continued from Page 28)

above referred to, placed it above 200,000 bbls., which will be reached within 30 days, after which the decline will be very rapid.

George & Jones' well, after flowing 30 days at an average of about 1,500 bbls. a day burst forth on Sunday with a production of 500 bbls. an hour of clean pipe line oil, which more than offset the decline caused by the defection of the Sunny Jim Oil Co.'s well.

There is a gradual increase of the water and bottom sediment content in the oil from all the wells that have not been producing clean oil.

Hazardous Drilling

The inconsistency of the wells as regards gas pressure is not the only situation that keeps Smackover operators studying. The biggest problem confronting them is the matter of a finding a safe casing seat. Below the first or Nacatoch sand lies a gas sand at about 2,100 feet. This sand yields enormously and at high pressure. Wells of 50,000,000 feet production would not excite much comment. The rock pressure in the early productive days was 1,400 pounds. This gas is, as a rule, safely shut off by the action of the rotary mud, which likewise shuts off the salt water between the gas and the third or lower oil sand. Thus far drillers have found difficulty in finding a good casing seat. They cannot depend upon finding a thick cap rock. It is present in some wells, but in others there may be nothing but a thin shell. Owing to this uncertainty a driller may attempt to find a safe seat in gumbo, or in hard shale, just above the sand. If he is so unfortunate as to pick the wrong spot or the work has been improperly done, and the gas and salt water break through, there is a gas blow out carrying an ocean of salt water, such as occurred several times in the past week, in one case making a crater into which the derrick was drawn, the rig collapsing and toppling over onto the ground a twisted steel ruin. Controlling these wild gassers is a herculean job calling for unusual skill and julgjudgment and great personal bravery, because it takes a fine line of courage to ascend a derrick or work on the floor in a rain of rocks, sand and salty mud.

Cementing Recommendations

In order to protect the gas sand and to preserve the oil sand from the possibility of salt water inroads El Dorado oil men through the efforts of the Arkansas Petroleum Club adopted a set of cementing rules given below which they recommended that the State Conservation Commission enforce:

"The following schedule shall be followed in setting and cementing to the 2,360-foot (below sea level) sand in the Smackover district and east of north and south line passing through the center of Section 2, Township 16, Range 16.

"In setting 6 to 6⅝-inch casing inside 9⅞-inch hole a minimum of 250 sacks of cement must be used; 6 to 6⅝-inch in 8½ to 9-inch hole a minimum of 200 sacks; 6 to 6¼-inch in 7⅞ to 8-inch hole a minimum of 125 sacks; 8 to 8¼-inch in 10½ to 11-inch hole a minimum of 275 sacks. Where 5⅞-inch casing is set in 6¼-inch hole or where 4½-inch is set in 6 to 6¼-inch hole 30 sacks of cement must be used to every 100 feet of open hole or in the proportion of one sack of cement to each 3½ feet of hole.

"On all wells drilled in the above named area surface casing shall be set and cemented with a minimum of 50 sacks of cement at a minimum depth of approximately 300 feet."

Leading Companies Operating

The development of the Smackover deep sand is in the hands of none but experienced oil men. Such nationally known names as the Standard Oil Co. of Louisiana; Gulf Refining Co. of Louisiana. The Texas Co, Pure Oil Co., Amerada Petroleum Corp., Roxana Petroleum Corp., Sinclair Oil & Gas Co., Ohio Oil Co., Humble Oil & Refining Co., Simms Oil Co., Houston Oil Co., Sun Co., Phillips Petroleum Co. and others may be found on a Smackover map, together with the names of smaller but well administered companies and firms. With their organizations working smoothly in the business of producing oil from the upper sand, all were well prepared to take instant advantage of the production from the deeper sand, when the Lion Oil Refining Co. proved it existed with its test in Section 8-16-15.

Low Cost of Storage

The question of lease storage is the least of the Smackover operator's troubles. The soft sandy soil is easily and cheaply converted into reservoirs. The heavy crude pours into these great pits with little first loss and the evaporation loss later is insignificant. It costs from 1 cent a barrel upwards to build the pits, depending on the lay of the ground and its pitch, or whether the pit is built on cleared ground or in the pine woods. The average cost of the storage would not reach 5 cents per barrel. There are many such empty pits on Smackover leases which were built when the upper sand was being developed and these, of course, are "velvet" to their owners. The Standard Oil Co. of Louisiana has enormous reservoirs containing most of the 14,500,000 bbls. of heavy crude thus stored in the field. Most of the production that may be developed in the field from the deep sand will go into storage. The companies producing it can afford to keep it until the fuel oil demand creates a market for it. It will not deteriorate, as higher grade oil would. The cost of drilling to the Smackover deep sand averages about $12,000 the well. It will be seen that a Smackover operator can drill 4 wells and provide 1,000,000 bbls. of earthen storage for the cost of the Sinclair Oil & Gas Co.'s recently completed deep sand well in the Garber Field, in Oklahoma.

Smackover Crude Shippers

The market for heavy Smackover crude is provided by or through the Standard Oil Co. of Louisiana, Gulf Refining Co., American Petroleum Co. of Texas, Hughes Oil & Pipe Line Co., Houston Oil Co. of Texas, Humble Oil & Refining Co., Lion Oil Refining Co. of El Dorado, the Pure Oil Co., Crusader Pipe Line Co., Louisiana Oil Refining Co., Simms Oil Co., Union Fuel Co., Sun Oil Co., United Central Oil Corp., Roxana Petroleum Corp., McMillan, Fehlman & Oliver, and H. H. Cross Co. The Standard Oil Co. of Louisiana has been the heaviest purchaser. Previous to the opening of the deep sand production that company ran about 62 per cent of the crude from about 42 per cent of the wells in the district. The Gulf Refining Co., which was next to the heaviest buyer, until there was as much work in progress ran about 11 per cent and the remaining 27 per cent was divided among the other 16 purchasers, most of which were also producers of crude. The greater part of the oil is shipped out in tank cars.

The total of Smackover heavy storage on February 1, was 19,012,321, bbls. By March 1 this had increased to 19,153,140 bbls., of which 4,085,213 bbls. was in steel and 14,499,152 bbls. in earthen storage and 568,776 bbls. was on lease storage. By April 1 the steel storage showed little change but the oil in earthen storage increased to 14,525,000 bbls. With the completion of the more than 200 wells now drilling for the deep sand the quantity of oil in storage in the field will be increased to a figure which at this time it would be idle to even estimate.

Old Dry Holes Were Discouraging

The delay in discovering the deep Smackover pay can easily be explained. Col. A. E. Humphreys drilled two dry holes in Section 17-16-15, one to 3,400 feet. Both wells were within a mile of wells now producing from the deep sand. This exploratory work discouraged deeper drilling until this year when the Lion Oil Refining Co. went down to see what was in the lower horizons and opened the field. The present day attitude of mind of operators in the field is that there may even be deeper producing sands and a high grade oil sand is confidently looked for by some at about 2,600 feet or at 3,000 feet. It is not expected that any deeper tests will be made this year, but as the peak of production of the Smackover deep sand is expected within the next five weeks and after that wells of much smaller production are expected, the interest in the 2,400-foot sand may cool sufficiently to cause some adventurous operator or production superintendent to drill even deeper this year. The tremendous production of some of the wells completed is expected to severely drain the acreage around them and the second crop of wells—those not yet started—will, it is believed, be comparatively small. One official at the head of the production department of a leading oil company ventured the opinion that in three months flowing wells would be a thing of the past in the field and that all completions then would be put on the pump.

SOUTHWEST TEXAS FIELDS

(Continued from Page 31)

No. 8 Holbien at 2,033 feet swabbed 200 bbls.; same company's No. 9 Holbien is drilling. Magnolia's No. 4 Oscar Thompson, an attempt to pick up a deeper sand, is at 2,190 feet in heaving shale which has made it impossible to keep the hole open. Texas Pacific Coal & Oil Co.'s No. 2-B Holbein, an attempt in the north end of the field to pick up a second sand, has been abandoned at 2,299 feet. Texo Oil Co.'s No. 3 Lopez, a Killam deep test at the north is in hard rock at 2,257 feet.

Of two tests being drilled by O. W. Killam interests on Cole Petroleum acreage and just over the line in Duval County No. 1 Benavides is in sticky shale at 1,480 feet and the No. 2 Benavides with a gas showing at 1,665 feet, set casing at 1,662 feet. It may make a gasser. No show of oil. He is preparing to test after drilling to 1,750 feet.

Miscellaneous Wildcats

Foster-Reiter of Oklahoma and Donald Clark of West Virginia are rigging up for a test in Bastrop County, 7 miles southwest of town of Bastrop and 1 mile west of No. 1 Lino Garza drilled a couple of years ago and abandoned. Location is in the general northeast trend from the Luling and new Lockhart fields in Caldwell County and is only a few miles from the Lockhart Field.

Hondo Drilling Co. (Metzker and others) has taken the contract to drill two tests for E. Nolle, lumberman of Austin, Texas, on surveys 529 and 809 in Medina County.

Good Oil Co.-Dixie Oil Co.'s No. 3 Cantu, in eastern Bexar County, an attempt to find shallow production at 1,400 feet, picked up in No. 1 a deep test but missed in No. 2, is drilling at around 600 feet. W. L. McClannahan-Stebbins Oil & Gasoline on the Thompson tract near Carpenter in eastern Bexar is drilling at 350 feet.

Medina County

Mid-Kansas Oil & Gas Co.'s No. 1 Jacob Haby a few miles south of Dunlay should be in the Edwards lime within another week, the Edwards being the objective of the test. It is drilling now at below 1,430 feet in the Del Rio. It topped the Austin chalk at 1,114 feet, went out of that into the Eagle Ford at 1,335 feet, out of that into the Buda at 1,370 feet and out of that and into the Del Rio at 1,424 feet. There were good oil and gas showings in the Eagle Ford. The log is running a little high and is considered to look fairly good.

Amy Oil Co.'s No. 1 Whipff, south of Devine, cored at 2,647 feet, which looks like Buda. It is several miles farther from the Balcones Fault than the Mid-Kansas and hence finds formations lower. It topped the Austin at 2,372 feet and went out of it into the Eagle Ford at 2,504 feet. It is shut down waiting for fuel oil.

Kone-Willis' No. 1 Fusselman is drilling at 3,200 feet, having successfully passed cased off cavities, and is believed in the bottom of the Trinity. This is one of the deepest tests in San Antonio territory geologically at this time with the exception of United North & South's Tiller deep test at Luling. Contract on the Kone-Willis calls for a test to 4,000 feet.

Lampasses-Bisbee's No. 1 Haeglin is drilling at 1,249 feet in the Taylor Marl (producing formation of Somerset) with some good showings.

Ina Oil Co. completed cleaning out the old Smith & Donaldson well on the west side of Hondo Creek and 800 feet west of its discovery well which stood for a year or more uncased but started flowing when the discovery well was recently shot with nitroglycerine. The Smith & Donaldson after being cleaned out and washed for several days has been cased and liner set and is being put on the pump for a test. The driller estimates it at from 10 to 30 bbls. Depth is 925 feet.

California-Medina's No. 1 Rothe, northwest of D'Hanis, a mystery well with the slush pit covered with lumber, is drilling in hard formation and without much additional depth since reported at 2,800 feet. It is in in the Pennsylvanian.

Somerset Deep Tests

Lefevre & Storey-Marland Oil Co.'s No. 1 Binz, a deep test in the edge of the Somerset shallow field, has cased off sulphur water at 1,968 feet, and will resume drilling in a few days. Ballard & Underwood's No. 1 Eastwood, a deep test in Somerset has set 300 feet of surface casing and is waiting for cement to harden.

Rio Bravo, near Anchorage, 10 miles south of Somerset Field, and in Atascosa County, shut down at 2,500 when the crown sheet of the boiler blew out. Repairs are being made.

Rig is on the sidetrack at Pearsall in Frio County for a deep test of Lefevre & Storey which will be started in a short time. Location is being made.

CALIFORNIA MARKET IS DECIDEDLY DULL

LOS ANGELES, Calif., April 11.—The California refined oil market is decidedly dull. Offerings are getting more plentiful in all commodities, especially the gasolines, both motor and natural. The summer period of high consumption has not quite arrived and marketers are getting a little impatient awaiting it. The most unsettling influence still remains the weakness of the price structure in the Mississippi Valley and along the Atlantic Seaboard. While California quotations on motor gasoline, both at refineries and service stations, have not changed yet despite the larger volume of offerings, the price structure in the natural gasoline market is decidedly spotty. Two of the largest oil companies in California are offering 3 to 4¼ cents under the service station price of motor gasoline, tax excluded. At the same time, the Shell Co. of California, which heretofore has been a very large buyer of absorption gasoline has stepped out of the market entirely. This, coupled with the production of recently erected plants, has been a more unsettling influence than the purchasing by the other companies has been able to offset.

Kerosene is soft and in scant demand. The same condition prevails in the various stove and furnace distillates and smudge oils. The lubricating oil market is featureless and fuel oil is just about holding its own.

Artesia, N. M. Field Records Completion State's Largest Well

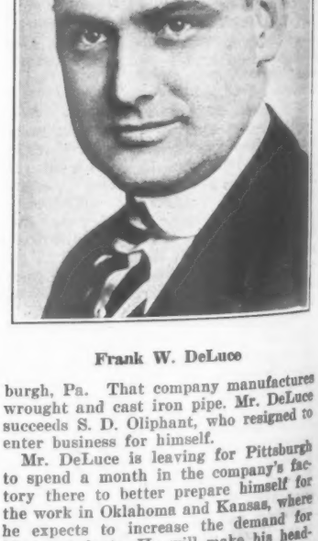
ARTESIA, N. M., April 13.—The completion of three wells in this field, one of which is the largest producer in New Mexico, featured the past week's activity. The first of the new wells to hit the pay was the Danciger Oil & Refining Co.'s No. 1, located in the southwest quarter of Section 18-18-28. After drilling the sand from 2,095-2,124 feet the hole was shot with 80 quarts, which materially increased the production, the well now flowing by heads and apparently good for 300 bbls. One head of 25 minutes gauged 180 bbls.

On the eastern edge of the field, the Maljamar Oil & Gas Co.'s No. 1, in the south half of the northwest of Section 28-18-18, after flowing naturally was also shot with 160 quarts, run between 1,990-2,035 feet. Making 500 bbls. in the first 12 hours the well for the past few days has been flowing at the rate of 700 bbls. daily and when settled in a few weeks it is estimated will be a 400-bbl. producer. This is easily the best producer in the field to date, and as a result acreage changed hands rapidly, most of the buying being confined to close-in stuff.

The third test to hit the pay is the Gilliland Oil Co.'s No. 1, in the northeast of the northeast of Section 29-18-28. With the bit only a few feet in the pay the hole is standing half full of fluid. George Bobb also reports a small producer in his test on the Thompson permit in Section 18-17-28, good for 5 bbls. from 450 feet. A good showing is reported from the Ohio Oil Co.'s No. 1, in the southwest of Section 1-19-28, at 1,350 feet.

FRANK W. DELUCE NOW WITH A. M. BYERS CO.

Frank W. DeLuce, who was the first city salesman of the Murray Tool & Supply Co. and became known throughout the Mid-Continent as the "Fairbanks valve and Wickwire drilling line" man, has been made Kansas and Oklahoma representative of the A. M. Byers Co., of Pittsburgh, Pa. That company manufactures wrought and cast iron pipe. Mr. DeLuce succeeds S. D. Oliphant, who resigned to enter business for himself.



Frank W. DeLuce

Mr. DeLuce is leaving for Pittsburgh to spend a month in the company's factory there to better prepare himself for the work in Oklahoma and Kansas, where he expects to increase the demand for Byers products. He will make his headquarters in Tulsa upon his return from the East.

Oil Price Too Low, J. J. McGraw Says; Gasoline Yet Cheap

NEW YORK, April 14.—J. J. McGraw, president of the Exchange National Bank of Tulsa, now in New York, says: "Prices of crude oil are too low when we consider the cost involved in finding and developing new fields. So far as the Mid-Continent is concerned there are no new large sources of supply in sight and the demand for light oil to take care of gasoline requirements is very large. Sinclair's new Garber well is an exception but this is deep drilling and development takes some time. Gasoline is, in my opinion, still the cheapest of commodities when all elements of cost and transportation, refining and marketing are considered."

Tank Spacing Report Ready for Submittal To Arbitration Body

NEW YORK, April 14.—A conference of the petroleum industry under the auspices of the American Petroleum Institute, held in Chicago April 8, 9 and 10, heard discussed and approved a report of a special subcommittee of the Institute Committee on Fire Prevention and Protection, comprised of Harry L. Shoemaker, Frank A. Epps and Ralph J. Reed on tank spacing and distance tables. The committee later held meetings in New York and on April 16 will present its final report to the Arbitration Committee, composed of representatives appointed by the American Petroleum Institute, the National Board of Fire Underwriters, the Bureau of Explosives, Associated Factory Mutual Fire Insurance Cos. and International Fire Chiefs Association, appointed to settle the controversy which has arisen over storage tank spacing and distance tables.

The Chicago conference also took up tentatively drawn regulations just issued by the Conference Committee on tank trucks of the National Fire Protection Association's committee on flammable liquids for safeguarding of automobile tank trucks.

ROCKY MOUNTAIN AREA

(Continued from Page 46)

solidated Oil Co. completed a producer on Section 31-40-78 in the second Wall Creek that will make 30 bbls. from 2,251 feet.

Field Runs for the Week

Salt Creek	63,410
Teapot	2,160
Big Muddy	3,240
Grass Creek	4,820
Elk Basin	950
Greybull	15
Rock Creek	2,890
Rex Lake	100
Lance Creek	640
Poison Spider	85
Osage	340
Hamilton Dome	570
Lander	240
Byron	100
Pilot Butte	30
Lost Soldier	4,200
Powell	50
Cat Creek	3,180
Sunburst	2,950
Florence	240
Craig	780
Fort Collins	1,180
Tow Creek	160
Rangeley	100
Hogback	600
Artesia	740
Rattlesnake	500
Miscellaneous	200
Total	94,470

OKLAHOMA FIELDS

(Continued from Page 35)

wood Oil Co., and C. L. McMahon, are building the rig for No. 3 Rentie, CNL NW NW SW Section 31-12-12, offsetting the new Wilcox well of the Simms Oil Co. to the south; the Simms Oil Co. has a rig on the ground for No. 2-A Rentie, SW cor. SE NW Section 31-12-12.

Vogler & Lightner have completed No. 1, CNL NE SW Section 19-14-16, top sand 1,615 feet, pay 1,642 feet, total depth 1,785 feet, plugged back to 1,642 feet, making 20 bbls. after a 60-quart short.

Near Eram

C. E. Campbell's No. 2 Sampson, NE cor. SW NW Section 30-13-15, has been completed for 2,000,000 feet of gas, sand 705 to 720 feet, total depth 800 feet.

South of Paden

H. F. Wilcox has a failure in No. 1, NE cor. NW Section 32-11-7, which is dry at 4,014 feet.

South of Okmulgee

The Anglo-Texas Oil Co. is rigging up to drill an old well deeper in No. 1 C NE NE NW Section 4-11-11, old total depth is 3,050 feet; Fred Cusack and others have completed No. 6 Hopwood, NW cor. NE Section 11-11-11, for 35 bbls. after an 80-quart shot, sand 1,245 to 1,275 feet.

Casey and others' No. 2 Hawkins, CWL SW SW NE Section 4-11-12, made 20 bbls. after a 60-quart shot, sand from 1,503 to 1,542 feet; the Windsor Oil Co.'s No. 4 Holmes, CNW SW SE Section 22-11-11, is spudding.

Near Dustin

The Carter Oil Co. has completed another gas well near Dustin in No. 1, SE cor. NE Section 35-10-12, dry sand 4,705 to 4,720 feet, plugged back to 3,250 feet, and good for 6,000,000 feet of gas.

South of Papoose

Fuhrman Petroleum Co. has abandoned location for No. 1 Harjo, SW cor. NW SW Section 26-9-9.

Wilcox Well in Glenpool

Thompson & Black's No. 1, CWL NE NW Section 24-17-12, is spraying oil estimated at a 30-bbl. show in top of Wilcox sand at 2,291 feet, and was drilled 3 feet in.

Bristow District

The Atlantic Oil Producing Co.'s No. 2 Johnson, SW cot. SE Section 14-17-8, is making 125 bbls. naturally and 6,000,000 feet of gas in sand from 2,753 to 2,768 feet. The company has spudded No. 3, CSL SW SE Section 14-17-8; and is rigging No. 4 Johnson, NE cor, SW SE Section 14-17-8.

Madden & Madden are rigging up No. 2 Bishop, SE cor. SW SW Section 13-17-8; the Aztec Oil Co. has built the rig for No. 3 Johnson, NW cor. SE SE Section 14-17-8.

The Savoy Oil Co. has completed No. 5 Johnson, CNL NW NE, Section 23-17-8, with sand 2,222-2,278 feet and oil 2,234-2,272 feet. The well was shot with 100 quarts and is making 50 bbls.

The Lima Oil Co. has spudded No. 4 Green, NW cor. NE NW, Section 24-17-8; T. B. Slick and others' No. 1-A Alec, SW cor. NE SW Section 27-17-8, is spudded; Olean Petroleum Co. is drilling at 400 feet in No. 3 Yarhola, NE cor. SE Section 31-17-8.

The Pure Oil Co. completed No. 2 Washington, NW cor. NE SW Section 32-17-8, in sand 3,497 to 3,522 feet, and shot it with 60 quarts, the well making 60 bbls. oil and 60 bbls. water. This is an old well drilled deeper.

The Burnett Oil Co.'s No. 1 Jack, SE cor. NW Section 1-18-7, has a hole full of water in the Layton sand 1,512 to 1,588 feet, and is shut down for casing.

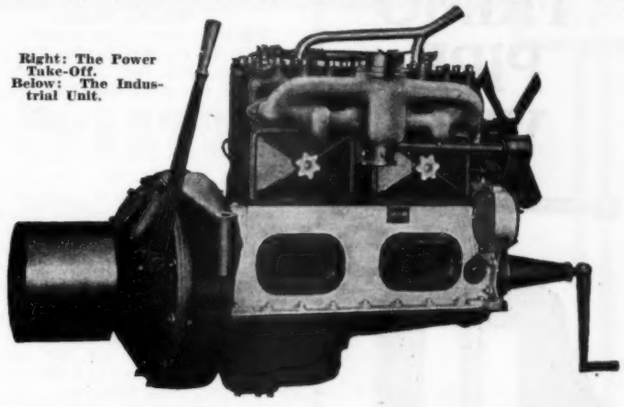
Waite Phillips has completed No. 2 Hill, CEL NW SE, Section 6-16-9, sand 2,738 to 2,744 feet, gas and oil 2,744-2,754 feet. It was shot with 30 quarts and made 100 bbls.

Wolfe Oil Co.'s No. 2, CWL NW SE NE Section 6-16-9, had sand 2,752 to 2,770 feet, total depth 2,775 feet, and when shot with 20 quarts made 10 bbls. oil and 10 bbls. water.

Bu-Vi-Bar Petroleum Co. has a rig up for No. 1 Fellows, C NW SE Section 5-17-9; No. 1, NE cor. SW Section 25-17-9, is shut down for water at 100 feet; Pure Oil Co. has a rig up for No. 1 Roberts, SW cor. SW Section 30-17-9; J. H. Wright is drilling No. 7, SW cor. NW SE Section 24-17-10, at 300 feet.

Penrod & Thompson are rigging up for No. 2, CSL NE SE Section 20-16-9; Texas & Pacific Oil Co.'s No. 2 Barnett, CWL NE SE Section 6-16-9, is spudded; and its No. 2 Mosquito, CNL NW NW Section 6-16-9, is drilling at 425 feet; Red Bank Oil Co. has cemented the 5-inch casing at 2,980 feet in No. 1 Fixico, NW

EQUIPPED WITH RICARDO CYLINDER HEAD



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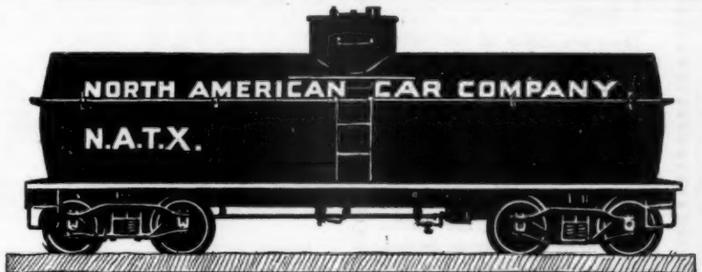

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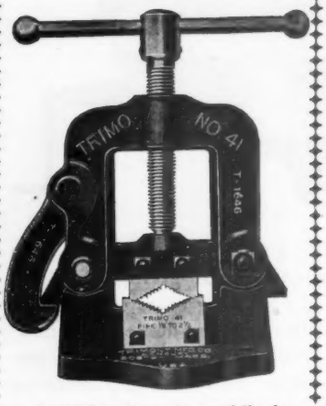

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cor. SE, Section 16-16-8; Sartain Brothers' No. 1 Artusse, SE cor. SW NW Section 32-17-8, is drilling at 3,005 feet. This is an old well drilled deeper.

Wewoka District

The Dixie Oil Co. has completed No. 1 Parker, NE cor. SW Section 32-8-8, sand 2,813 to 2,832 feet, total depth 3,191 feet. It was plugged back and made 40 bbls.

The Dixie Oil Co. has completed No. 3 Walker for 175 bbls., sand 3,176 to 3,188 feet.

W. R. Ramsay's No. 1 Bowlegs, NW cor. NW Section 31-8-8, is dry and abandoned at 3,421 feet; his No. 2 Bowlegs, SE cor. SW NW Section 31-8-8, has an 80-bbl. show, sand 3,064 to 3,094 feet.

He is rigging up for No. 2 Cunseh, NW cor. NE Section 36-8-7. Roxana Petroleum Corp. is drilling No. 1 Herrod, SW cor. NW NE Section 12-8-8, at 1,000 feet; Prairie Oil & Gas Co.'s No. 3 Bowlegs, SE cor. NE SW Section 31-8-8, is drilling at 1,250 feet.

Near Wetumka

The Superior Oil Corp. and others have 10,000,000 fet of gas in No. 1, SW cor. SE Section 20-9-10. Sand was from 2,485 to 2,500 feet, and the well is drilling at 2,683 feet.

Canadian County

Northwest of El Reno, the wildcat test of Zwicker & Carrol has been abandoned for lack of funds. It was No. 1 Porter, SE cor. SE Section 2-13-8w, and was 200 feet deep.

Stephens County

Knox Petroleum Co.'s No. 1-A, Indian Land, SE cor. SE Section 11-2-5w, is estimated at 10 bbls. in sand 1,412 to 1,415 feet. The owners are building a standard rig. Knox Petroleum Co.'s No. 1 Dyche, CEL SW NE Section 2-2-5w, is drilling at 490 feet.

The Smith Law Oil Co. has completed No. 4 Brymer, an old well drilled deeper which made 30 bbls. oil and 30 bbls. water from sand 2,111 to 2,114 feet. The company is preparing to deepen two old wells, No. 2 Brymer, NW cor. SE NE Section 31-1-8w, and No. 3 Brymer, CEL NW NW, Section 31-1-8w; The Ka Wye Oil Co. is rigging up to deepen No. 1 Hines, SE cor. NW SW Section 25-1-9w; Magnolia Petroleum Co.'s No. 10 Harris, is completed for 32 bbls., sand from 2,039 to 2,059 feet; Ka Wye Oil Co. has lost the hole in No. 2 Coffelt, C SW SE Section 26-1-9w, and the rig was skidded 20 feet north; Magnolia Petroleum Co. has a new rig for No. 1 Wollsey, NE cor. NW SE Section 26-1-9w, and is drilling at 200 feet in No. 1 Hyre, NE cor. SE NW Section 26-1-9w.

Duncan

Crump & Beard have completed two old wells drilled deeper, No. 1 Cantrell, C north half NW SE Section 32-1s-8w, which is a 40-bbl. well, sand 2,250 to 2,261 feet; and No. 3 Cantrell, NW cor. SE Section 32-1s-8w, which is pumping 20 bbls., sand from 2,240 to 2,245 feet, total depth 2,275 feet.

Fisher & Brannon have a 60-bbl. pumper in No. 3 Worrell, CEL SE NW Section 22-1s-8w, sand 1,997 to 2,018 feet.

The Day Oil Co. has a rig built for No. 1 Covington, CNL NW NE Section 21-1s-8w; Pierce & Brown are rigging up cable tools to drill an old well deeper in No. 3 Wilkinson, NW cor. SE Section 27-1s-8w; Magnolia Petroleum Co. is drilling at 780 feet in No. 4 Worrell, SW cor. NW Section 19-1s-8w.

Logan County

North of Guthrie, Haley & Smith have spudded a wildcat test and shut down, in No. 1 SE cor. SW Section 33-18-3w.

The Mulberry Oil & Gas Co. has a rig on the ground for No. 3 NW cor. NE NW Section 5-17-4.

Davenport

The Oklahoma Natural Gas Co. is drilling at 780 feet in No. 1 SE cor. NE SE Section 31-15-4; the Magnolia Petroleum Co.'s No. 1 NE cor. SW Section 32-15-4, is a lost hole, abandoned at 3,995 feet.

The Sinclair Oil & Gas Co.'s No. 1 Booth, CSE NE SW Section 34-15-5, is drilling at 1,270 feet; Prairie Oil & Gas Co.'s No. 5 Stout, CNW NE NW Section 3-14-5, is drilling at 860 feet.

The Magnolia Petroleum Co. has lost the hole and abandoned the test at a total depth of 3,995 feet in its No. 1, NE cor. SW Section 32-15-4.

The Oklahoma Natural Gas Co.'s No. 1, SE cor. NE SE Section 31-15-4, is drilling at 780 feet.

Key West, Creek County

Hoyt & Wicker have completed No. 1, Lot 24, Block 4, at Key West, for a 50-bbl. well after a shot of 20 quarts, in sand from 4,080 to 4,164 feet.

Keystone District

The Buckeye Drilling Co. has completed No. 2 Caroline, CEL SE NW NE Section 1-19-9, with sand from 1,911 to 1,936 feet and oil at 1,928 feet. It was shot with 60 quarts and made 35 bbls.

The Gled Oil Co. has completed No. 1 Tucker NE cor. SW Section 17-19-9, which was drilled to 3,417 feet and plugged back to 2,230 feet where it is making 2,000,000 feet of gas.

H. U. Bartlett's No. 1, CNL NW NW Section 17-18-9, is making 20 bbls. naturally in sand 2,510-2,572 feet, total depth 2,599 feet. It was plugged back to 2,572 feet. This is an old well drilled deeper.

H. U. Bartlett has a rig for No. 5 King, NW cor. NE SW Section 17-18-9.

Sand Springs District

Sand Springs Home's No. 2 Fisher, SE cor. SE Section 19-19-12, is a rig.

The Highway Oil Co.'s No. 12 Yargee, CWL NW SE SW Section 20-19-12, is spudded; Highway Oil Co.'s No. 13 Yargee, CSL NE SW Section 20-19-12, is spudded; Thornton and others are spudding No. 2-A Berry, SW cor SE SW Section 20-19-12.

Payne County

The O'Kansas Oil Co. has completed No. 1 Blue, SE cor. SW SE Section 7-18-5, in sand 1,549 to 1,554 feet, and the well is making 20 bbls. of oil and some water.

The Home Gas Co.'s No. 4 Ellis, CWL SW NW Section 1-18-5, is drilling at 325 feet; Shaffer Oil & Refining Co.'s No. 15 Laughlin, NE cor. NW NE, Section 2-18-5, is drilling at 100 feet.

Carter County

Levant and others have a well estimated good for 140 bbls., but not completed in No. 2 Brewer, SW cor. NE SE Section 27-1s-3w, sands 3,243 to 3,250, 3,258 to 3,260 feet. It is cleaning out and swabbing.

Tidal Oil Co.'s No. 1 Morgan, SE cor. NW Section 28-1s-3w, is swabbing 75 bbls. oil from sand 3,407 to 3,451 feet.

Magnolia Petroleum Co.'s No. 3 Hart, NE cor. SW NE Section 21-1s-3w, is swabbing 175 bbls. from sand 2,740 to 2,748 feet.

Simpson Fell's No. 1 Lowery, SE cor. SW NW Section 9-4s-2w is estimated at 200 bbls., sands 2,216 to 2,293 feet, and 2,310 to 2,390 feet.

Jefferson County

The Humble Oil Co.'s No. 1 SE cor. SW SW Section 18-7s-5w, is drilling at 80 feet.

The Connell Oil Co.'s No. 1 Anderson, SE cor. NE Section 31-4s-8w, is dry and abandoned at 3,082 feet.

Grady County

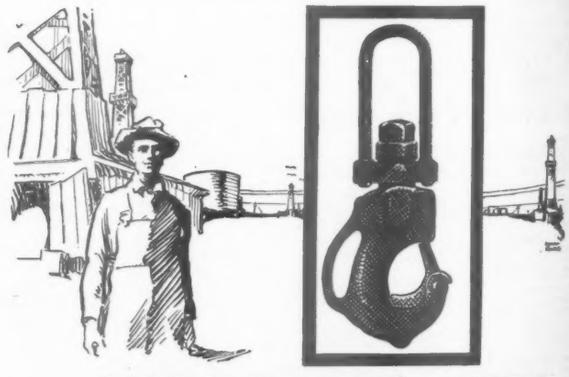
South of Chickasha, Noble & Wetervelt are rigging up a rotary for No. 3 McCaughtry, a twin well, CSL NE NE NW Section 35-5-8w.

Clark & Cowden have built a rotary rig for No. 2 Simpson NE cor. SW SW Section 18-2-7w.

Winkler and others have a rig for No. 1 Simpson, SW cor. SE SW Section 18-2-8w.

Robberson Field, Garvin County

The Texas & Pacific Co. has completed No. 3 Jordan, CSL SW NE NW Section 17-1-3w. Oil was from 1,765 to 1,798 feet, water 1,799 to 1,806 feet, and the well was plugged back to 1,798 feet and is pumping 50 bbls. The company is rigging up a rotary for No. 4 Dardyn, SE cor. NW NW Section 17-1-3w, and has set the 8-inch pipe at 1,515 feet and is drilling ahead in No. 4, SE cor. SW SE Section 8-1-3w.



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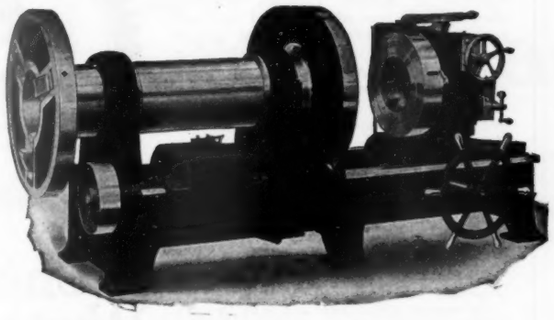

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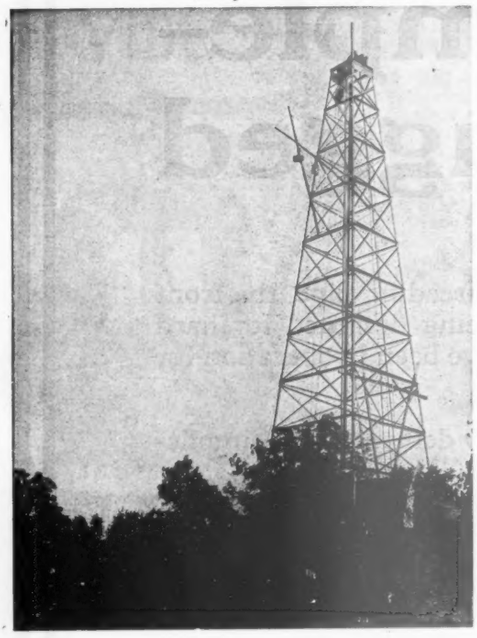

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NEW ETHYL GASOLINE TESTS GOING FORWARD

BALTIMORE, April 10.—Elaborate tests carried out on animals, under the auspices of Federal research workers, show manufacture of tetraethyl lead, essential to ethyl gasoline, does not involve undue danger to life, it was declared in a report to the American Chemical Society in session here, prepared by Thomas Midgley, Jr., of New York, vice president of the General Motors Research Corp.

"At the present time," said Mr. Midgley, "new tests are going forward at the United States Bureau of Mines in Pittsburgh with a gasoline containing five times the normal quantity of tetraethyl lead."

To date no single symptom of lead poisoning has developed, he said.

Enormous advantages will flow through the development of this new motor fuel, according to Mr. Midgley, who summarized the benefits as follows:

"Conservation of petroleum due to the increased mileage obtainable by using a non-knocking gasoline in a high compression motor, the reduction of carbon monoxide contamination of the atmosphere due to increased efficiency of combustion; reduced first cost of automobile apparatus."

The convention of the American Chemical society in the spring of 1926 will be held in Tulsa, Oklahoma. Other convention dates were announced as follows: August 3-8, Los Angeles; autumn, 1926, Philadelphia; spring, 1927, Richmond, Va.

DISCUSS FORMATION IN URANIA WILDCAT

SHREVEPORT, La., April 11.—Centenary College, at Shreveport, La., will offer a two-year elective course in petroleum geology, at the opening of the next fall term. Prof. A. Salathe, head of the science department, made the announcement during the meeting of local geologists enrolled for the Louisiana State University course, held at the Shreveport Memorial Library.

Prof. H. V. Howe conducted the meeting, the second of the spring series, discussing the differentiation between members of the Claiborne formation on the southeast flank of the Sabine uplift. The lecture was illustrated by a map showing the four fossil localities and type sections and emphasis was laid upon the claim that the Claiborne is divided into four parts instead of two.

Considerable argument developed whether the oil recently discovered in the Urania wildcat in La Salle Parish is coming from the St. Maurice, hitherto regarded barren, or the Wilcox sand underlying it. Professor Howe separated the St. Maurice sand into three formations, contending the wide divergence between the fossils found in the upper and lower bodies of the formation, heretofore regarded as one, warrant assumption that the St. Maurice is really three distinct formations separated by non-fossiliferous, or non-marine strata.

TITLE CLOUDING SUITS IN THE HUMBLE POOL

HOUSTON, Tex., April 11.—May 4 has been set as the date for trial in a suit instituted by the State against all companies and individuals operating in the Humble Pool, in Harris County, 20 miles north of Houston. The litigation involves title to 648 acres and the oil produced therefrom, valued at $50,000,000, according to the State's contention.

The legal departments of the various operating companies named in the suit say the action is merely one of the usual "title clouding" suits peculiar to south Texas. The suit is based on boundary lines fixed in an old Mexican survey by what was known as Alligator Port, and the location of a magnolia tree noted in surveys made 90 years ago. Both marks have disappeared.

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Wyoming Petroleum Club Ends Season, Electing Officers

CASPER, Wyo., April 10.—At the last meeting of the season of the Wyoming Petroleum club election of officers was held for the coming year. H. J. Lowe, of the Bureau of Mines, was elected president to succeed Mr. Estabrook; W. H. Geis, first vice president; John G. Bartram, second vice president; H. E. Daley, third vice president and G. H. O'Donnell as secretary and treasurer.

D. W. Greenberg of the Midwest Refining Co., talked on current events, the Sinclair contract with the Soviet Government and its abrogation; also the new taxation on gasoline.

Manager Ralph Loucks of the Carter Oil Co., followed with a talk on rotary and cable drilling. Mr. Loucks gave as his opinion that the rotary tools would crowd out the cable tools. There are places, however, where, he said, the cable tools will not be supplanted by the rotaries due to peculiar formations, but in nine-tenths of the present fields, the rotaries, he said, will be found the better outfit for putting down the wells. At Fort Collins, Colo., the rotary proved a failure although operated under the direction of some of the best rotary men in the California fields, due to the formations that wear out the tools there. In the Lance Creek Field in Wyoming, the rotary was a failure because of crevice faulting in the strata. In this field the rotaries lose their circulation and nothing can be done, it seems, to bring the circulation back, baled hay and mud have been used extensively in a vain effort to stop up the faults. Where the rotaries have no basic trouble to contend with however, this type of drilling outfit, he said, will do much better work. Mr. Loucks cited the Billy Creek Field in Johnson County as an example. In this field the Carter Oil Co. drilled the first well with cable tools and worried down the hole in 13 months. This well developed a tremendous gas pressure that broke the cable, blew the tools out, tore down the rig and did other damage. The second well was drilled with a rotary outfit and was completed in a total of 36 days to a depth of 3,054 feet. The gas pressure was kept in check with the mud laden fluid so no trouble was experienced with the gas pressure although this second well was even larger than the No. 1. The third well took 28 days to complete with the rotary outfit and the saving of pipe alone on the rotary wells would have paid for the cable string. Mr. Loucks cited that the cable tool well used a string of 20-inch casing, one of 15½, one of 12½, one of 10, one of 8¼ and one of 6⅝, while the rotary wells started with about 100 feet of 12½ pipe and carried the hole to the top of the sand where the 8¼ string was set, thereby eliminating four strings of pipe in the rotary hole.

Jack Clearly of the Midwest engineering department followed Mr. Loucks with a lecture on the use of earth dams in this region for the retention of water for oil field use. Mr. Cleary's talk was based on his engineering experience of 10 years in the field as a civil engineer for the larger oil firms and he showed how an earth dam can be built to hold water in this country where such procedure has been condemned by engineers not familiar with the alkaline soils we have in the Rocky Mountain region. In some cases where exceptional conditions such as cloudbursts washed out the earth work, concrete structures would have failed also and when the spillway of the dam at Salt Creek went out in the big flood last year, the concrete bridges and other structures supposed to be out of reach of the waters were also destroyed.

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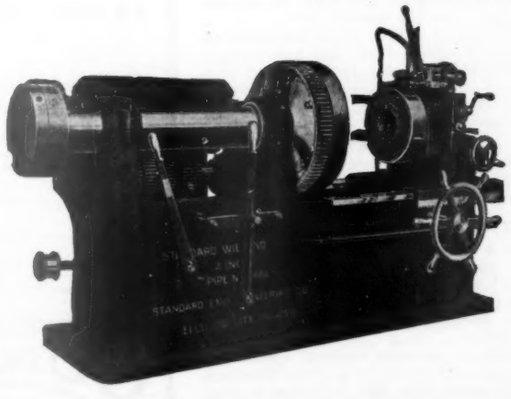

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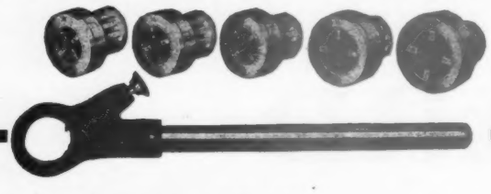

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Light Oil Production Is Running Short of Present Requirement

By L. M. Fanning

Are we producing enough gasoline-bearing crude oil in the United States to meet the probable gasoline requirements for this year?

An analysis of pertinent statistics reveals that not only is present light oil production (gasoline-bearing crude) running short of meeting 1925 requirements, but that this situation has existed over a period of several months.

It shows that crude oil price advances could have been logically expected prior to November of last year and that they were overdue at the time Wortham began to loom on the horizon. Even with Wortham at its peak, production of light crude was below the quantity estimated as needed this year.

The swift determination of the production possibilities at Wortham, served to reassert the factor of insufficient light crude and cause overdue price advances to occur. The rapid decline of production in the Wortham Field coupled with the general situation as to current light crude production and light crude prospects throughout the country intensified the upward price movement.

Consumption of gasoline manufactured by refineries, including exports, in 1924 totaled 210,693,000 bbls.

A conservative estimate of increased consumption in 1925 is 12 per cent, or 25,283,000 bbls.

From Bureau of Mines refinery statistics, it is estimated that the gasoline yield from light domestic crude oil in 1924 did not exceed 39 per cent.

Supply and Requirements

Applying this percentage to the estimated increase consumption of gasoline for 1925, namely, 25,283,000 bbls., this quantity of gasoline means 65,000,000 bbls. of additional light domestic crude oil required. That is, 178,000 bbls. a day more than was required in 1924.

In 1924 production of gasoline-bearing crude in the United States averaged, it is estimated, 1,700,000 bbls. a day. There was an indicated surplus of this class of oil amounting to 70,000 bbls. daily, making the average consumption, including exports, 1,630,000 bbls. a day.

Adding the estimated increased requirements for 1925 to the 1924 consumption, the total estimated requirements of light oil for this year, without figuring any increase in exports, are 1,808,000 bbls.

It is now interesting to observe how actual production of light oil has compared with the 1,808,000 bbls. estimated as needed this year, and what the tendency of production of light oil in this country is at the present time.

Production of light oil since the decline of the Wortham Field, has been around 1,700,000 bbls. a day, indicating that the output of gasoline-bearing crude is short 108,000 bbls. daily of meeting 1925 requirements.

Peak Insufficient

Prior to the development of the Wortham Field, light oil production was also running around 1,700,000 bbls. daily. In the early part of November it averaged around 1,670,000 bbls., showing even a greater shortage of current supply as against probable requirements than is indicated at the present time, and clearly justifying price advances at that time; in fact, showing them to be overdue.

That no advances occurred reveals the restraint due to the fears of the Wortham development, this field beginning to supply production of sufficient volume to be a market factor before the end of November.

With the Wortham Field drilled up, the peak of light oil production was reached the middle of January, amounting to something like 1,768,000 bbls. daily. This is shown to have been still insufficient to meet the average demand estimated for the coming year.

In fact, if the estimate is to be accepted, the only time the production of domestic gasoline-bearing crude oil has been adequate to meet the probable de-

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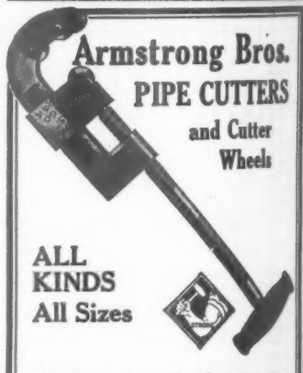

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mand for this year, was during the period of intense production in 1923, when from about the middle of June to the first of December production of light oil ran above 1,800,000 bbls. daily, running at times above 2,000,000 bbls. daily and reaching its maximum during the month of September of that year.

In considering this analysis, it is well to emphasize the importance of the factor of the percentage gasoline yield from crude oil. This will vary according to the use of cracking and other processes which would increase the percentage yield, and also the quality of the light crude run by refineries affecting the average yield.

The estimated gasoline yield from domestic light crude run by United States refineries in 1923 is, as stated, 39 per cent, and this percentage has been used in figuring increased light oil needed in 1925 to meet estimated gasoline requirements.

A variation in the percentage has a substantial bearing on the situation. If the actual yield should be increased 1 per cent it is equivalent to needing from about 45,000 bbls. to 50,000 bbls. less crude.

More Cracking in 1925

There will undoubtedly be a greater amount of cracking done this year than last year, which will tend to increase the average yield of gasoline from gasoline-bearing crude. On the other hand, it looks as if the quality of light crude produced will average lower than last year, this factor tending to offset the factor of increased cracking.

As against the indicated gasoline yield of 39 per cent from light domestic crude run by refineries last year, the yield from all grades of crude run (light, heavy and foreign crude) was 33 per cent. If this percentage is applied in the same manner as has been done in figuring out the light crude situation, it would indicate that present production is running 205,000 bbls. daily short of estimated 1925 requirements of all grades of crude.

GASOLINE-ELECTRIC CARS FOR RAILROAD

CASPER, Wyo., April 11.—The first of the heralded gasoline-electric cars to take the place of trains on railroads in this region passed through Casper en route to Laurel, Mont., where it will be delivered for service to the Northern Pacific Railroad there. This car is one of seven for use on this railroad and is to take the place of a steam train on local branch service. It consists of an engineers' compartment housing the engine of 180 h.p. which turns an electric dynamo which supplies the power for operating; then a baggage compartment and passenger compartment. The car is to make 60 miles per hour and if it proves successful is expected to increase the local consumption of gasoline in this region. The other railroads are reported to be watching the experiment of the Northern Pacific closely and the Burlington Railroad engineers are looking into the feasibility of this new type of car for use in Wyoming. At the same time the railroads are finding it hard to economize with fuel oil at its present high price and some officials consider the locomotives that have been using oil may be turned back to coal.

NEW PIER AT BAY TOWN

HOUSTON, Tex., April 11.—The Humble Oil & Refining Co. will open its new concrete pier at the Baytown refinery next week. It will double the wharfage space at the plant. Two takers, one on either side, can be loaded at one time.

GASOLINE TAXES IN TEXAS

HOUSTON, Tex., April 11.—The Gulf Refining Co. leads in the amount of gasoline taxes during the month of February, paying the State $85,707 on gasoline sold in Texas. The Texas Co. paid $56,862, the Magnolia Petroleum Co., $44,262; Humble Oil & Refining Co., $19,171; Pierce Petroleum Corp., $23,906, and Texhoma Oil & Refining Co., $13,013.

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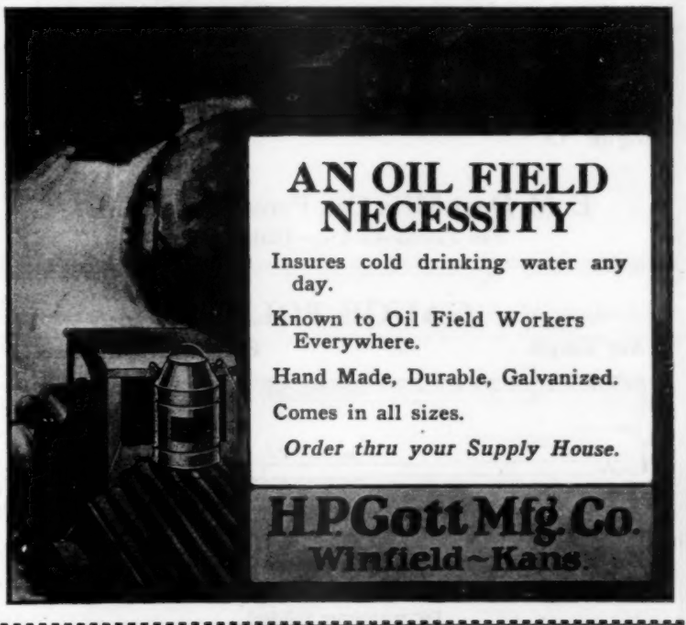

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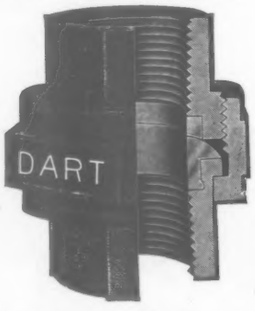

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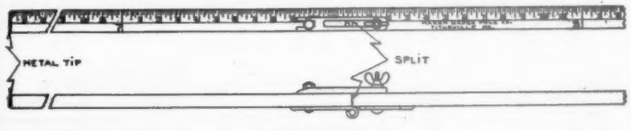

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Origin of Anticline In Benton Shale Area Of Western Kansas

By C. R. Thomas

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On December 13, 1923, the discovery well in the Russell Field on the Fairport anticline, in the southwest corner of the southeast quarter of Section 8 Township 12 south, Range 15 west, Russell County, Kansas, was brought in by the M. M. Valerius Oil Co. at a depth of approximately 3,000 feet.

Due to the fact that this discovery was so far removed from any other production, a great rush occurred to this territory. Up to this time, though numerous deep dry holes have been drilled in this region, no commercial production has been found outside the original field.

Some of these tests were not located on geological advice, but many were located on good surface anticlines. However, the anticlines drilled, though covering sufficient territory, and having considerable closure were apparently caused by different forces than those causing the Fairport anticline.

The Fairport anticline is a long plunging, assymetrical fold, with an axis extending along a straight line, and with the west limb much more steeply folded than the east limb. Up to this time, with the possible exception of the Natoma anticline to the north, which is possibly an extension of this same fold, this structure is unique in that it is the only one of its type that has been found.

Folds Found in Area

The area of greatest deformation occurs in Lincoln and Mitchell Counties, which are east of Russell County. In these counties, among many others, are found the following folds:

The Beloit Dome has been tested by the Alcorn Oil Co. to a depth of 3,605 feet; 470 feet into the Ordovician.

The Lincoln Anticline is being tested by the Amerada Petroleum Corp. This well is about 3,640 feet deep.

The Margaret Anticline has been tested by the Equity Oil Co. to a depth of 2,760 feet.

The Lucas Anticline is being tested by Richey & Moore. This well is about 2,100 feet deep.

The Luray Anticline has been tested by Merriam and others to a depth of 3,705 feet. This hole is possibly 260 feet into the Ordovician.

In Rush County, Pryor & Lockhart tested the Smoky Hill Anticline to a depth of 3,620 feet; 50 feet into the Ordovician.

As these folds were all mapped on the Greenhorn Limestone member of the Benton Shales, there is little question as to the surface mapping.

Because of the fact that all of these folds, with the exception of the Fairport Anticline, that have been tested, have, to date, been non-productive, it appears that their origin must have been due to forces different than those causing the Fairport folding. Such subsurface studies as have been undertaken lead one to believe the Fairport Anticline to be a "buried hill." Insufficient drilling has been done on the other folds to demonstrate whether such be the case or not.

Origin of Folds

Many theories have been advanced to account for the origin of these folds, one being because of the presence of a thick salt horizon near the base of the Wellington Shales of Permian age, for some time the theory of their being salt domes was seriously considered. However the absence of any salt in the test on the Lincoln Anticline makes this theory untenable.

Another theory is that these folds were caused by the thickening of the gypsum beds when changing from anhydrite to

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gypsum. Allowing a thickening of 40 per cent, with a 100 feet of reversal on some of these folds, this would necessitate a body of gypsum at least 300 feet thick. Since no such body, nor any such amount, of either gypsum or anhydrite, has been logged in any of these wells, this theory does not seem to be of value.

It has been suggested that Bentonite shales expand greatly in taking up water and that these folds may have been caused by such shales at a comparatively shallow depth below the surface. In this theory the shales must be considered as being in or below the Dakota, as the Dakota is folded along with the Greenhorn. Since the presence of such shales is purely hypothetical, this theory must be considered merely as a possibility.

Another suggestion is that the gypsum beds below may have leached out leaving these folds as a result. However, as these folds are definitely higher than the surrounding country, and as a leaching process usually causes closed synclines, and depressions, as well as being very irregular, this theory does not seem to fit.

As most of these folds conform to the topography, this fact has been considered as having something to do with their origin. As most anticlines in the Mid-Continent region conform to some extent to the topography, it does not seem that much significance should be attached to this fact in this case.

The absence of faults, the lack of parallelism of their axes, and their apparent lack of lineup along any series of lines, lead one to believe that any theory including a tangential compression is very weak.

Differential Settling

The theory that has the most adherents is that these folds were caused by differential settling over buried hills. Because of the great depths of the Ordovician and granite, and the steepness of the surface dips, a very sharp profile on these horizons would be necessary to cause such steep surface folds. There being no evidence in favor of this theory, it must be discounted. Since the Permian, wherever exposed, consists of very soft beds, it is unlikely that sufficiently rugged topography could have been formed in this formation to have caused such folding. The soft Comanchean shales have the same objection. However, the harder Comanchean beds, previously confused with the lower Dakota, where exposed, do have very rugged topography. It seems likely that if Comanchean outliers were covered with a thick shale mantle, which later became more condensed, similar folds to those shown would be the result. Since the Dakota consists largely of shales, interbedded with massive sandstones this theory seems to fill most of the qualifications.

The fact that these folds are definitely raised above the level of the surrounding country, that they are domes rather than anticlines, seem to indicate that their origin must have been due to vertically acting forces.

Since these folds have uniformly proven to be non-productive, it seems that they must be of the "Surficial" type.

The fact that the tops of these folds are of similar altitudes, that other unconformities do not seem adequate, and that other theories do not seem tenable, leads one to the conclusion that these folds were caused by differential settling over hills in the Comanchean sandstone and quartzite series.

OIL PRODUCTION LEVY UPHELD

BOWLING GREEN, Ky., April 10.—The Kentucky Court of Appeals has upheld the validity of the 1 per cent tax, holding the act a license tax and hence constitutional. Judge Dietman who dissented, argued that the license tax was imposed in lieu of all taxes, including an ad valorem tax, and as the legislature could not impose a license tax in lieu of an ad valorem tax the license tax attempted in lieu of the ad valorem tax is invalid.

The court held that the Swiss Oil Corp. had no right to sue for the other oil companies.

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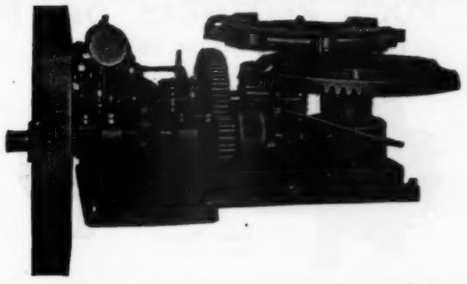

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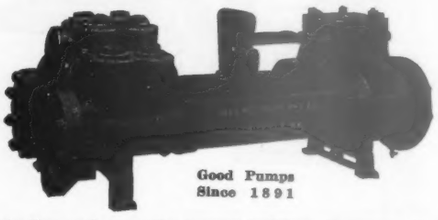
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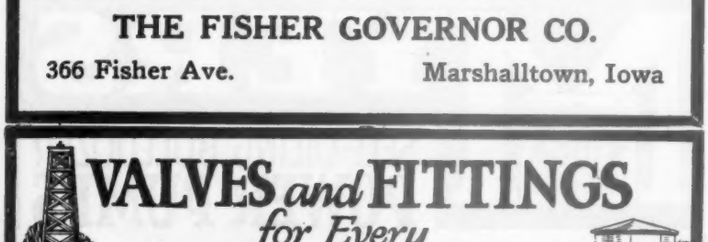
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OPERATORS COOPERATING ON CONSERVATION PLAN

SHREVEPORT, La., April 11. — A committee composed of Senator Pete McCall, of Union County, Arkansas, Ike Felsenthal and O. L. Bodenheimer, of El Dorado, made a special trip to Little Rock, where they laid before the railroad commission a formal complaint against lax enforcement of State conservation laws. The claim was made that the practice of letting the gas wells blow wild in the Arkansas gas territory is flooding the new deep sand area with salt water in addition to ruining the gas field.

Following the complaint a meeting was held at El Dorado, under the auspices of the Chamber of Commerce of that city, attended by the railroad commissioners, oil operators and heads of companies operating in the Arkansas fields, for the purpose of seeing how the situation could best be handled. It was the consensus of opinion that the present conservation laws of Arkansas are all that could be desired and that all that is needed is their enforcement.

Speaking for the gas industry before the commission, H. R. Dickerson, of the Natural Gas & Petroleum Co., of El Dorado, said the second gas sand in the Smackover Field had rock pressure of 1,040 pounds when first discovered; that in July, 1924, the rock pressure was 780 pounds; in January, 1925, 680 pounds, and that during the past 60 days it has dropped to a little over 400 pounds. Mr. Dickerson expressed the opinion that unless some remedy is applied immediately, the gas sand in this area will have been depleted within 60 days.

W. C. O'Ferral, in charge of the Standard Oil properties in Arkansas, was also a speaker, representing the oil fraternity. Mr. O'Ferral said failure to plug wells in the old El Dorado south field had caused great loss to operators in that district, and the same conditions were now threatening the Smackover Field. He told how good wells in the Smackover Field, standing next to improperly plugged wells, making salt water, had dropped to 75 per cent within four or five days.

Joe Elam, secretary of the Louisiana-Arkansas division of the Mid-Continent Oil & Gas Association; R. N. Benson, president of the El Dorado Chamber of Commerce, and M. E. Floyd, chairman of the Arkansas Railroad Commission, spoke of the necessity of arousing public sentiment in favor of protecting the natural resources of the State, the conviction that the conservation laws were not being enforced, and expressed appreciation of the cooperative spirit which was being manifested among the oil fraternity toward conservation.

A unique plan of cooperation was evolved at the meeting. A committee is to be appointed consisting of seven oil operators in the Arkansas fields, to be named by the Arkansas Petroleum Club and approved by the Mid-Continent Oil & Gas Association, to act as a jury whenever there is a complaint brought to the State agent, such as a question of policy or whether a well in its existing state is a menace to the field. The committee shall hear both sides, take a vote and recommend what shall be done. In case the interested operator has not the necessary funds to kill the well or carry out the orders of the State conservation department, the local oil men will furnish funds to take care of the emergency.

JASPER N. THOMPSON DIES

Jasper N. Thompson, a well known oil operator, died recently at the Methodist Hospital, Indianapolis, following a brief illness. Mr. Thompson became ill with pneumonia at Cannel City, Ky. Mr. Thompson was born at Pontiac, Clay County, Indiana, June 27, 1883. He entered the oil business in Illinois and acquired holdings in the fields of Kansas, Oklahoma and Texas. Until a few years ago his interests were mainly in those States, but in the past two years he took over large properties in Kentucky.

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Detailed Operations in Eastern Fields for March, 1925

EASTERN FIELDS

Fields—	Comp.	Prod.	Dry	Gas
Allegany	13	28	1	0
Bradford	65	187	2	1
Middle Field	5	15	0	0
Venango-Clarion	28	31	3	6
Butler-Armstrong	6	5	0	3
Southwest Pennsylvania	11	7	5	4
West Virginia	73	94	12	44
Southeast Ohio	74	692	12	13
Total March	275	1,059	35	71
Total Feb.	269	1,010	32	67
Difference	6	49	3	4

Fields—	Rigs	Drg.	Ttl.
Allegany	9	25	34
Bradford	24	61	85
Middle Field	0	6	6
Venango-Clarion	2	21	23
Butler-Armstrong	12	20	32
Southwest Pennsylvania	13	30	43
West Virginia	49	147	196
Southeast Ohio	45	105	150
Total March 31	154	415	569
Total Feb. 28	168	364	532
Difference	14	51	37

WELLS COMPLETED

ALLEGANY FIELD

Coon, Romeo Oil Corp. ..... dry
Fee, A. C. A. Oil Corp. 1
Fee, Phillips & Howard ..... wtr
Murphy, First National Bank of Shinglehouse and Murphy 2
Fee, L. W. Shaner et al 2
Fee, J. E. LeSuer et al 2
Fee, T. J. Gilligan et al 8
Fee, C. W. Mead 2
Fee, Cuba National Bank No. 14 2
Fee, O. E. Crandall 2
Fee, M. J. Crawley et al 4
Fee, Martin O'Conner 2
Fee, Martin Bros. & Wasson 1

Wells completed 13
Production 28
Dry 1

BRADFORD FIELD

Farr, G. C. VanVetchen & Son 2
Sill, Hope Oil 1
Garlock, Denwood Oil 2
Hodge, South Penn Oil 1
Fee, Evans & Wood 2
Gorwin, J. H. Gallagher 2
Nesselson, Nesselson Bros. 1
Melvin, South Penn Oil 2
Roggenkamp, J. Roggenkamp 2
Lafferty, George & George 2
Melvin, South Penn Oil ..... dry
Wright, Wright & Johnson 4
Bingham, J. L. Yerdon 4
Howard, Pressure Oil 5
Howard Pressure Oil 5
Howard, Pressure Oil 5
Doubleday, Pressure Oil 3
Duke, Gridiron Oil 3
Duke, Gridiron Oil 3
Duke, Gridiron Oil 2
Shepard, South Penn Oil 8
Pittenger, South Penn Oil 1
Baldwin, Forest Oil 2
Noble, Forest Oil 3
Porter, Forest Oil 3
Porter, Forest Oil 3
Irvine, C. E. Potter 2
Burns, A. E. Yahn 3
Baldwin, C. B. Kervin 2
Gelvin, Simpson & Cooper 2
Duke, Jeutter & Mitchell 3
Vincent heirs, S. H. Elder et al 3
South Penn Oil, Wright et al 16 8
Bing. 296, Andrus & McDowell 97 1
Bing. 291, Geo. W. Bovaird 74 5
Bing. 490, T. H. Kennedy Co. No. 2, 128 4
Bing. 370, R. M. & James George 16 6
Bing. 541, Park & Bovaird 27 ..... wtr
Bing. 370, C. L. Wann et al 37 2
Bing. 368, Forest Oil No. 9, 43 4
Fee, Wagner Oil No. 1 2
Weston, Jr., Tr., South Penn Oil 83 2
Redfield, South Penn Oil 95 1
Fee, W. E. & W. W. Parmenter 27 2
Fee, A. W. McCandless & Son 3 ..... dry
Clugston et al, Parker Farm Oil 11 6
Fee, L. & F. J. Shippey 12 2
Franchot, H. E. Seeley 19 1
Fee, L. G. Dana 4
Fee, Mrs. Jos. T. Jones 2
Clark, Clark & Marsh 2
Fee, Wm. C. Kennedy Co. 45 10
Bing. 150, South Penn Oil 58 5
Bing. 462, South Penn Oil 52 4
Bing. 544, Associated Prod. 340 3
Fee, South Penn Oil 18 ..... wtr
Bing. 188, Harris Oil 2
Fee, South Penn Oil 1
Fee, Barry Est. 2
Bing., Associated Prod. 150 2
Bing., Associated Prod. 151 2
Hazelwood & Kennedy, Holding Oil 20 ..... snd
Bing. 554, South Penn Oil 2
Bing. 576, South Penn Oil 103 ..... gas
Bing. 591, Associated Prod. 332 20

Wells completed 65
Production 187
Dry 2
Gas 1
Water 1

MIDDLE FIELD

Osgood, Rembold et al 6 10
Bingman, Rocky Grove Oil 12 1
Rogers, F. H. Trax 2
Mack, S. M. Mack 1
Lot 3664, South Penn Oil 38 1

Wells completed 5
Production 15

VENANGO-CLARION

Bakin, C. B. Reeves 17 1
Hollister, J. T. Atwell 14 1
Moore, William Moore 1 ..... gas
Stevenson, Midland Oil 36 5
Emery, Berry & McCray 18 2
Emery, Berry & McCray 18 1
Morrison, S. P. McCalmont Est. 1 ..... gas
Kaverline, Joe Kaverline 22 1
McCalmont 226 acres, S. P. McCalmont Est. 44 2
Sayers, Kelley heirs & Hoffman 9 2
Holstein, C. F., W. D. & F. C. Richey 29 1
Burkhardt, Frank Masterson 13 1
Hasson, Ed Siederman 48 4
P. & Z., Leadenham & Hancox 2 1
Knapp P Preston, Flack & Kurtz 6 1
White, Corbett & White 15 1
Bailey, Hovis & Co. 1 ..... dry
Grant, Kelly, Trax & Parker 4 1
Clarion—
Kahle heirs, A. D. Shorts et al 2 1
Black, Southern Oil & Kahle 5 1
Lauffer, Scott, Lewis et al 2 ..... gas
Switzer, T. B. Swartzfager 1 ..... gas
Whitling Bros., Whitling Bros. Gas 2 ..... gas
Beck, Kugler, Youkers et al 1 ..... dry
Wentling, V. Glass 2 2
Keating & Breamer, Potts, Heeter & Edinger 2 2
Gilmore, Phillips & Lamberton 1 ..... gas
Callaham, Agnew & Co. 1 ..... dry

Wells completed 28
Production 31
Dry 3
Gas 6

BUTLER-ARMSTRONG

McKinney, Hutchison & Campbell 6 2
Helm heirs, Elliott & Neff 2 2
Wylie heirs, Saxonburg L. & H. 2 ..... gas
Ferguson heirs, Woods & Heeter 1 ..... gas
Cookson, S. Lobaugh et al 1 1
Wilson Est., E. H. Hutchison 2 ..... gas

Wells completed 6
Production 5
Gas 3

ALLEGANY FIELD

Rigs

Fee, Empire Gas & Fuel, Ltd.
Fee, Empire Gas & Fuel, Ltd.
Fee, Clyde Jordan.
Fee, Turner, Cady & Allen.
Fee, Hamilfan et al.
Fee, L. W. Shaner et al.
Fee, T. J. Gilligan et al.
Fee, C. L. Childs et al.
Fee, Martin Bros. & Wasson.

Wells Drilling

McAndrews, E. J. Atwood.
Trask, J. A. Withey et al.
Brown Land & Oil, First Trust of Wellsville et al.
Taylor, C. W. Taylor et al.
Fee, Empire Gas & Fuel, Ltd.
Reid Agt., Randall & McEnroe.
Norton, First Trust and Richardson.
Fee, M. A. Jordan.
Cass, F. J. Wilson.
Fee, A. C. A. Oil Corp.
Fee, C. Congdon.
Kinley Oil, W. J. Weller et al.
Kinley Oil, W. J. Weller et al.
Kinley Oil, W. J. Weller et al.
Murphy, First National Bank of Shinglehouse and Murphy.
Fee, F. J. Woodward.
Fee, Emma A. McEwen.
Fee, R. J. Dermitt.
Fee, Henline et al.
Fee, L. C. Whitford et al.
Fee, T. J. Gilligan et al.
Fee, F. J. Phillips et al.
Fee, Sadie Sawyer et al.
Fee, Turner Oil Corp.
Childs, N. K. Wilson.
Rigs, 9; wells drilling, 25; total, 34.

BRADFORD FIELD

Rigs

Duke, M. L. Boyle.
Borden, T. B. Wilson.
Porter, Forest Oil (four rigs).
Hanes, Coast & Storm.
Fee, Grant & Mohan 59.
Bing. 291, Geo. W. Bovaird 76.
Bing. 370, C. L. Wann et al 39.
Burgess, Love Wright et al 22.
Rounds & Lawrence, South Penn Oil 44.
Weston Jr., Tr., South Penn Oil 85.
Winsor, Wilson & Co. 6.
Redfield, South Penn Oil 96.
Johnson Est., J. H. Brahaney 8.
Drake heirs, Hannon Oil.
Fee, Geo. Gallagher 8.
Fee, South Penn Oil 19.
Grimm, J. W. Abrams 3.
Erie R. R., E. F. Connors 9.
Bing. 410, South Penn Oil.
Bing. 499, South Penn Oil 40.
Bing. 533, South Penn Oil 70.

Wells Drilling

Fee, Barcroft & Murray 6.
Bing. 391, Geo. W. Bovaird 75.
Bing. 370, C. L. Wann et al 38.
Bing. 296, Andrus & McDowell 98.
South Penn Oil, Wright et al 17.
Riddell Est., South Penn Oil 45.
Weston, Jr., Tr., South Penn Oil 84.
Fee, J. H. Brahaney 43.
Burns et al, J. Burns 28.
Fee, L. & F. J. Shippey 13.
Fee, A. Schorman 17.
Fee, E. A. Potter 2.
Fee, L. G. Dana 14.
Franchot, D. & P. Oil 23.
Fee, Jeutter Bros. 9.
Griffith et al, Hertzel & Knabb.
Leasure, South Penn Oil.
Fee, A. A. Park 12.
Fee, South Pen Oil 35.
Bing. 590, South Penn Oil 59.
Fee, South Penn Oil.
Fee, Barry Est.
Bing. 405, South Penn Oil.
Bing. 423, South Penn Oil.
Bing. 439, South Penn Oil.
Bing. 439, South Penn Oil 78.
Bing. 533, South Penn Oil 70.
Bing. 570, South Penn Oil 104.
Bing. 533, South Penn Oil 68.
Bing. 499, South Penn Oil 39.
Bing. 439, South Penn Oil 77.
Bing. 581, Associated Prod. 339.
Bing. 576, South Penn Oil 105.
Bing. 593, P. A. Oakes & Son 22.
Bing. 580, Associated Prod. 343.
Farr, G. S. VanVetchen & Son.
Sill, Hope Oil (two wells).
Pratt, Petroleum Reclamation.
Fee, F. S. Boquin.
Bingham, H. B. O.
Rew, Lincoln et al.
Jack, J. & H. M. Jack.
Campbell, F. W. Calkins, trustee.
Chamberlain, Whitehead & Carson.
Ekas, R. C. Lloyd.
Fee, Skagg Bros.
Lafferty, George & Roggenkamp.
Roggenkamp, J. Roggenkamp.
Nolan, C. Nolan (two wells).
Nesselson, Nesselson Bros.
Rhodes, Rhodes Est.
Lawton, Oil City Trust.
Howard, Pressure Oil.
Duke, Gridiron Oil.
Borden, Raff & Schwab.
Borden, T. B. Wilson.
Burns, A. E. Yahn.
Duke, Duke & Blair.
Duke, Jeutter & Mitchell.
Rigs, 24; wells drilling, 61; total, 85.

MIDDLE FIELD

Wells Drilling

Jennings, C. E. Carnahan 32.
O'Hara, Pequignot & Co. 10.
Siggins, E. Piquignot 17.
Bingman, Rocky Grove Oil 13.
Bauer, Johnson Bros.
Lot 3767, F. J. Moser 25.
Wells drilling 6.

VENANGO-CLARION

Rigs

Lockhart & Frew, J. L., M. ., G. & A. Diamond 27.
Clarion—
Hoover, D. B. Shields, et al. 4.

Wells Drilling

Sterrett, S. R. Smith 61.
Henderson, S. Y. Ramage 49.
Blair, C. B. Stevens 39.
Hovis, Hovis, Surrena et al. 26.
Kern, C. B. Kern 11.
McCalmont 226 acres, S. P. McCalmont Est. 45.
Sayers, Kelley heirs & Hoffman 10.
Surrena, C. Surrena 6.
Zimmerman, Adam Zimmerman 6.
Crystal Springs, Jackson Oil & Gas 8.
Mercer—
Drake, Bunny Gilson et al 4.
Clarion—
McCauley, Passance & Isherwood 3.
O'Neill Bros., D. & H. O'Neill 2.
O'Neill Bros., Alum Rock Gas 1.
Knight, J. N. Campbell 6.
Kribbs, Brown, Bowser et al 4.
Buck, Vasey, Vensel et al 2.
Borrech, H. L. Conver & Morgan 1.
Knappenberger, J. W. Knappenberger 1.
Reed tract, Levi & Co. 2.
Wilson, S. W. Wilson.
Rigs, 2; wells drilling, 21; total, 23.

BUTLER-ARMSTRONG

Rigs

Neel, Dufford, Vensel et al 4.
Kamerer, Mr. and Mrs. E. R. Kamerer 1.
Shaner & Bellstein, Shaner & Co. 3.
Crawford, George Say 1.
Beck, Heasley Bros. & Simpson 1.
Bergbigler, Troutman & Perrin 1.
Melatt, Stoughton & Co. 1.
Campbell heirs, H. Moore & Co.
Barnhart, McGill & Nichols 1.
Boggs heirs, R. C. & W. V. Binkerd.
McKinney, G. F. Hovis et al 3.
Ray, Sherwin & Morris et al 1.

Wells Drilling

Bortz, Texas Oil 1.
Woods, Woods & Heeter 2.
Lackey, Saxonburg L. & H. 1.
Norris, American Nat. Gas.
Wylie heirs, T. W. Phillips Gas & Oil.
Delaney Bros., Delaney Bros. 1.
Hickey, Flick & Co. 1.
McCarron, Lang & Co. 2.
Duncan, Duncan, Meeder et al 6.
Goehring, J. A. Elliott 3.
Wilson Est., E. H. Hutchison 3.
Moore, E. Snow et al.
Griffith, E. C. Griffith.
Johns, I. N. Johns.
Horner, J. S. Walker.
Cumberland, Campbell & Sherwin 2.
Campbell, Baird, McCandless et al 12.
Ray, Yung & Graham 4.
Campbell, Baird, Keck et al 4.
Glenn, Carl Hilliard 6.
Rigs, 12; wells drilling, 20; total, 32.

SOUTHWEST PENNSYLVANIA

Washington County—

Gushert, Benedum & Trees 1 ..... dry

Allegheny County—

Lutsinger, Lutsinger & Co. 1 ..... dry
School lot, Brooker & Co. 1 ..... dry
Hoffman, C. Scott & Co. 1 ..... gas
Hicks, Black Bros. & Co. 4 2
Sickles, Schuck & Co. 3 ..... gas

Greene County—

Lewis, Carnegie Gas Co. 1 ..... gas
Shoup, Carnegie Gas Co. 1 5
Garner, Mfrs. L. & H. Co. 3 ..... dry
Wolfe hrs. Mfrs. L. & H. Co. 1 ..... gas
McGreevy, Waynesburg Gas Co. 2 ..... dry

Wells completed 11
Production 7
Dry 5
Gas 4

WASHINGTON COUNTY

Rigs

Carothers, Tague, Lutton & Co. 1.
Lacock, Mfrs. L. & H. Co. 2.

Wells Drilling

Lutton, Tague, Lutton & Co. 4, 5.
Conklin, Conklin & Glass Oil Co. 1.
Thome, Robt. Hayes & Co. 1.
Wylie, Kennedy & Co. 3.
Haslett, Mfrs. L. & H. Co. 1.

ALLEGHENY COUNTY

Rigs

Donaldson, F. W. Formay & Co. 1.
McCray, Harbison & Co. 1.
McKinney, M. Williams 2.
Miller, Robinson & Co. 2.

Wells Drilling

Woodside, So. P. O. Co. 5.
Hardt, Ferguson & Co. 1.
Steel, Steel & Co. 1.
Clever, M. Clever 2.

GREENE COUNTY

Rigs

Howard hrs., Peoples Gas Co. 1.
Vance, Carnegie Gas Co. 1.
Lemley, Carnegie Gas Co. 2.
H. Lemley, Kennedy O. & Gas Co. 2.
Minor, Phila. Oil Co. 1.
Nichols, Mfrs. L. & H. Co. 2.
Caseman, Caseman O. & G. Co. 1.

Wells Drilling

South, Fred Garrison 1.
S. H. Lemley, Peoples Gas Co. 2.
Fox, Martin O. & G. Co. 2.
Casidy, Carnegie Gas Co. 1.
Patterson, Moore-Tex O. & G. Co. 2.
McClure, Randall Gas Co. 1.
Ross, Federated Gas Co. 1.
Kent, Peoples Gas Co. 1.
Davis, Carnegie Gas Co. 1.
Behm, Mfrs. L. & H. Co. 1.
Jones, N. G. Co. of W. Va. 1.
Gump, hrs., New Freeport O. & G. Co 1.
Caseman, Hope C & R. Co. 2.
Ernest, Mrs. L. & H. Co. 2.
Pierson, Pierson O. & G. Co. 1.
Gump, Phillips Drilling Co. 1.
McClumphy, Carnegie Gas Co. 1.
Stewart, Carnegie Gas Co. 1.
Webster, Mfrs. L. & H. Co. 2.
Andrews, N. & C. O. & G. Co. 4.
Rigs, 13; wells drilling, 30; total, 43.

SOUTHEASTERN OHIO

Monroe County—

Cline, Yeager trustee, 1 ..... dry
Watson, Carter Oil Co. 1 3
Bates, Anderson & Co. 1. 1

Perry County—

Sunday C'k C. Co., John Denman & Son 45 1
Michael Lemity, John Fouts & Co. 8 ... 3
St. Joseph L. Society, Regan & Co. 3 ... dry

Hocking County—

Stone, Gordon Oil Co. 3 180
Geiger, Mid-West O. & G. Co. 1 ..... gas
H. V. P. Co., Chartiers Oil Co. 193 52
Tracey est, Kachelmacher est 15 ..... dry
Sunday C'k Co., Sunday C'k C Co. 122 50
Jacobs, Jacobs Oil Co. 4 25
France, Ark. Fuel Oil Co. 2 3

Licking County—

Orr, Empire O. & G. Co. 1 ..... dry
Hughes, F. M. Rugg & Co. 6 2
Weiss, F. M. Rugg & Co. 4 4
McKinney, Jones & Reese 10 2
McKinney, Jones & Reese 11 2
Weakley, A. H. Heisey Co. 3 50
N. H. Weakly, Planet Oil Co. 4 8
Montgomery, E. H. Everett Co. 4 100
Smith, Ralph Bros. 8 4
Stevens, Moore & Adams 9 5
Tish, Carter Oil Co. 1 50
Taylor, Wehrle Bros. 9 3
Smith, Wehrle Bros. 5 2
Tavener, Wherle Bros. 2 3
Gorley, Wherle Bros. 1. ..... gas

Holmes County—

Herman, Carter Oil Co. 1 ..... gas
Carpenter, Harbison & Co. 1 ..... dry
Purdy, Pure Oil Co. 1 ..... gas
Miller, Pure Oil Co. 1 40
Bell, East Ohio Gas Co. ..... gas
Mackey, East Ohio Gas Co. 1 ..... gas
Connor, East Ohio Gas Co. 1 ..... gas
Bird, East Ohio Gas Co. 1 ..... gas
Davenport, Central Ohio Gas Co. 3 ... gas
Korns, Central Ohio Gas Co. 3 ..... gas
Finney, Central Ohio Gas Co. 1 ..... gas
Uhl, East Ohio Gas Co. 3 30

Fairfield County—

Graffis hrs., Flagdale O. & G. Co. 15 ... dry
Crist, Sturm & Co. 1 ..... dry
Smith, Pure Oil Co. 2 20

Noble County —

Wescott, Stephens & Co. 1 ..... gas
Hupp, Scheetz & Co. 3 2
Blake, Crock & Co. 1 ..... dry
Marsh, Marsh Oil Co. 1 1
Johnson, Dummerling & Co. 1 1
Johnson, Dummerling & Co. 2 2

Athens County—

Biddle,, Biddle Bros. 1 2

Morgan County—

Swytzer, Sun Oil Co. 7 35
Souders, Sun Oil Co. 2 20
Fisher, Pure Oil Co. 1 20
Stoneburner, Davis Oil Co. 1 ..... gas
Pletcher, W. Swingle 1 ..... gas

Muskingum County—

Hutson, Carter Oil Co. 1 5

Meigs County—

Crew, O. F. S. Co. 2 10

Washington County—

Dana, O. S. Reckard & Co. 7 5
Johnson, Ohio Glenn O. Co. 1 ..... dry
Newland, Chas. Dailey 2 2
Lehmer, Peoples B. & T. Co. 11 10
Reynolds, E. Stephens 2 1
Duvol, Co & M. Pet. Co. 5 5
Smith, Meracle Oil Co. 1 1
Hill, Otto Becker & Co. 1 ..... gas
Hammond, Adam Thornily 4 1
Murray, Beeson & Athey 5 10
Merganstein, Schantz & Co. 3 2
Male, Auburn, Oil Co. 4 ..... dry
Williams, Combine O. & G. Co. 2 ..... dry
Rake, H. H. Henny & Co. 2 3

Harrison County—

Cavin, Palmer & Co. 1 1

Carroll County—

Brandt, Miller-Locs O. & G. Co. 1 ... dry
Albaugh, Chas. Scott & Co. 1 10

Wells Completed 74
Production 692
Dry 13
Gas 13

MONROE COUNTY

Rigs

Barnard, Cobert & Co. 10.

Wells Drilling

Malone, Carter Oil Co. 2.
Pew, Soles Drilling Co. 1
Allen, Long Run Oil Co. 1.
Cronin, Antioch Prod. Co. 2.
Hartshorn, Berea O. & G. Co. 3.

PERRY COUNTY

Rigs

Akers hrs., Murray City O. & G. Co. 5.
Grummon, Dugan Hill O. & G. Co. 2.

Wells Drilling

Sunday C'k C. Co., O'Connor & Keller 22.
Gramian, Bullock & Co. 17.

Aker, Carter Oil Co. 2.
Trimmer, O. F. S. Co. 5.
Sunday C'k C. Co. Sunday C'k C. Co. 123, 124
Green, Carter Oil Co. 1.
Paxton, Holliday O. & G. Co. 3.
Metzgar, Trinway O. & G. Co. 1.
Welch, Southern Oil Co. 2.
Denman, Paxton Oil Co. 1.

HOCKING COUNTY

Rigs

Brimmer, Gordon Oil Co. 1.
Johnston, Griffin Prod. Co. 6.

Wells Drilling

Wagner, Gordon Oil Co. 1.
Mowery, Carter Oil Co. 1.
Hoskins, Ohio Falls O. & G. Co. 2.
H. V. P. Co., Chartiers Oil Co. 194.
Tracey est., Kachelmacher est. 16.
Longstreth, Preston Oil Co. 23.

LICKING COUNTY

Rigs

Bowers, Whitehill & Zohniser 4.
Bell, Carter Oil Co. 1.
McCullough, Carter Oil Co. 1.
Hazlett, Mid-East O. Co. 1 .
Claypool, E. H. Everett Co. 8.
Vanderbark, Carter Oil Co. 4.

Wells Drilling

Sommerville, Carter Oil Co. 3.
Derflinger, Whitehill & Co. 1.
Walcott hrs., E. H. Everett Co. 1.
Withelm, E. H. Everett Co. 1.
Bowser, Midland Oil Co. 3.
Orr, Midland Oil Co. 2.
Watts hrs. Carter Oil Co. 2.
Melick Bros., Atha Oil Co. 7.
Fyle, Ohio Gas Co. 1.
Stair, E. J. Edmonds & Co. 4.
Purdy, Weidman & Co. 1.
Motherspaw, C. E. Saltzgaber 8.
Franks, Detex O. & G. Co. 1.
Vanderbark, Carter Oil Co. 3.
Settles, Carter Oil Co. 3.
Porter, E. H. Everett Co. 1.
Taylor, Wehrle Bros. 10.
Tavener, Wehrle Bros. 3.

HOLMES COUNTY

Rigs

Anderson, East Ohio Gas Co. 2.
Kendall, Central Ohio Gas Co. 1.
Shank, East Ohio Gas Co. 4.
Patterson, Ark. Fuel Oil Co. 1.
Armstrong, Klice, McCann & Co. 1.
Davenport, Central Ohio Gas Co. 4.
Barnes, O. F. G. Co. 4.
Parsons, Rocky River Dev. Co. 2.
Patterson, Ark. Fuel Oil Co. 1.
Armstrong, Klice, McCann & Co. 1.
Uhl, East Ohio Gas Co. 1.
Carpenter, Pure Oil Co. 3.
Keiser, Pure Oil Co. 2.
Conkle, Carter Oil Co. 1.

Wells Drilling

Schauner, Ohio Oil Co. 1.
Sowash, East Ohio Gas Co. 2.
Patterson, East Ohio Gas Co. 1.
Close, East Ohio Gas Co. 1.
Martin, Central Ohio Gas Co. 1.
Connor, Central Ohio Gas Co. 1.
Uhl, O. F. G. Co. 2.
Martin, O. F. G. Co. 1.
Pyers, Rocky River Dev. Co. 1.
Parsons, Rocky River Dev. Co. 1.
Smith, Carter Oil Co. 1.
Smith, East Ohio Gas Co. 1, 2.
Sterling, East Ohio Gas Co. 2.
Troyer, Central Ohio G. Co. 2.

KNOX COUNTY

Rigs

Sherman, Upham Gas Co. 1

Wells Drilling

Vetch, Cline & Co. 4.

FAIRFIELD COUNTY

Rigs

Miller, Pure Oil Co. 4.

Wells Drilling

Focht, Peach O. & G. Co. 1.
McCandlish, Carter Oil Co. 1.
Dittoe, Planet Oil Co. 4.
Hyde, Rush Cr. O. & G. Co. 2.

Coshocton County

Rigs

Wolford, Spindler & Co. 4.
McKee, Spindler & Co. 4.
Myers, Pure Oil Co. 1.
Crawford, Pure Oil Co. 7.

Wells Drilling

Norris, Pure Oil Co. 3.
Gardner, Carter Oil Co. 1.

NOBLE COUNTY

Wells Drilling

Walters, Wash & Noble Co. 1.
Wescott, Earl Stephens & Co. 1.
Davis, J. F. Haynes & Co. 2.
Wm. Davis, Wm. Patton & Co. 3.
Corp. Tuttle & Co. 1.
Murray, Harper & Co. 2.
Williams, Williams & Clark 2.
Hutchinson, Worrel Bros. & Co. 1.
Hupp, J. H. Yearin & Co. 1.
F. Hupp, Harper & Co. 1.
Heddleson, Hackett & Metcalf 1.
Jeries, White & Co. 1.

ATHENS COUNTY

Wells Drilling

Lick Run C. & C. Co., E. L. Stephens 3.
Hamilton Bros., Preston Oil Co. 15.
Baker, Pure Oil Co. 1.

MORGAN COUNTY

Swytzer, Sun Oil Co. 8.
Souders, Sun Oil Co. 5.
Smith, Pure Oil Co. 3, 4.

Wells Drilling

Souders, Sun Oil Co. 4.
Fye, Pure Oil Co. 1.
Bush, Pure Oil Co. 1.

MUSKINGUM COUNTY

Rigs

McBurney, O. F. G. Co. 1.
Ashcroft, Pure Oil Co. 3.
Hudson, Carter Oil Co. 2.
Finley, Carter Oil Co. 3.
Dutroe, Carter Oil Co. 2.

Wells Drilling

Bowlin, Mid-East Oil Co. 1.
Evans, local parties, 1.
J. S. Evans, local parties 1.
Fawcett, Trinway O. & G. Co. 2.
Ruffler, Carter Oil Co. 1.

GUERNSEY COUNTY

Rigs

Wilson, O. F. G. Co. 1.

Wells Drilling

Clark, O. F. G. Co. 4.
C. Clark, O. F. G. Co. 1.

MEIGS COUNTY

Rigs

Jividen, Brocalsia Chem. Co. 1.

Wells Drilling

Cottrell, Brocalsia Chem. Co. 1.
Yost hrs. Pure Oil Co. 3
Cross, R. G. Gillespie 5.
Watson, Hovis & Co. 1.

WASHINGTON COUNTY

Rigs

Thornily, Victor Hammond 5.
Hanlon, Hill Top O. & G. Co. 7.

Wells Drilling

Mendenhall, Wise & Co. 32.
Rake, Peoples B. & T. Co. 15.
Bartelle, O. D. Jones 11.
Schantz, Palmer & Co. 3.
Edwards, Harris & Co. 3.
Gerber, Banks & Co. 1.
Wymer, E. Thornily & Co. 4.
Driscoll, J. T. Dillon 33.
Harvey, J. F. Ward 24.

JEFFERSON COUNTY

Rigs

Criswell, J. Needles & Co. 8.
McCullough Bros. Palmer & Co. 1.

Wells Drilling

Groves & Co., Boyce & Co. 3.
Rinehedst, C. D. Call 2.

CARROLL COUNTY

Wells Drilling

Blackledge, N. G. Co. of W. Va. 1.
Miskel, Miller-Lees O. & G. Co. 11.

COLUMBIANA COUNTY

Wells Drilling

Yaggi hrs. Kirk-Dunn Oil Co. 14.
Rigs, 45; wells drilling, 105; total, 150.

WEST VIRGINIA

Lewis County—

Edmiston, Hope Gas Co. 1..... gas
Kemper, Hope Gas Co. 1 ..... gas

Marion County—

Gump, So. P. O. Co. 9 1
Ice, Owens B. & M. Co. 1 ..... gas
Koen-McGraw, So. P. O. Co. 7 2

Monongalia County —

W. Tennant, O. C. Bradley 4 3
McDermott-Tennant, So. P. O. Co. 1... gas
M. Tennant, Dunn Mar O. & G. Co. 5... gas
Malinda Tennant, So. P. O. Co. 3 .... gas

Wetzel and Tyler Counties—

Morgan, Rawe Bros. 3 15
Ingram, Hope C. & R. Co. 1 1
Hixenbaugh, Mfrs. L. & B. Co. 1 ..... gas
Hess, So. P. O. Co. 2 ..... gas
Marshall County Bank, Mfrs. L. & H. Co. 11 ..... gas
Ramsey, Myers Gas Co. 1 ..... dry

Doddridge County—

Bates, Bates Oil Co. 1 ..... gas
McCoy, Hope Gas Co. 1 ..... gas
Weekly, Carter Oil Co. 1 ..... gas
Perine, Murphy Oil Co. 2 ..... gas
Stout, Carter Oil Co. 54 ..... gas
Kelly hrs. Raccoon O. & G. 3..... 8
Smith, Carter Oil Co. 1 5
Smith, Hope C. & R. Co. 2 15
Hufford, Carter Oil Co. 1 25

Ritchie County—

Goff, Hope Gas Co. 1 ..... gas
Wilson, E. E. Pope 3 5
Richards, Hope Gas Co. 1 ..... gas
Lemon, Cairo Oil Co. 2 ..... gas
Phillips, Edgar Lingh 1 ..... dry
Rymer, Hope Gas Co. 1 ..... gas
Westfall, Hope Gas Co. 1 ..... gas
Scott, Deem & Co. 1 ..... dry
Stanley, Hope Gas Co. 1 1
Conway-Patton, Mellon Bros. 2 3
Zichafoose, Zichafoose Bros. 1 ..... gas
Mullen, John McGinnis 1 ..... gas

Gilmer County—

Bennett, Hope Gas Co. 4 ..... gas
Bell, Hope Gas Co. 1 ..... gas
Stalkner, Hope C. & R. Co. 2 ..... gas

Braxton County—

Gerwig, Ohio Fuel Oil Co. 1 ..... dry

Wood County—

Stone, Stephens Oil Co. 3 ..... dry
Compton, W. G. Decker 1 ..... dry
Cooper, Mixer & Co. 2 2
Munchmeyer, G. W. Stout & Co. 2 3
Musser, Ridge O. & G. Co. 4 1
Johnson hrs., Park Bowser 1 ..... dry

Pleasants County—

Wagner, Monon Oil Co. 12 ..... dry
Gallaher hrs., Gallaher & West 5 3
Ambler, Bailey Gas Co. 3 5

Roane County—

Sheppard, Heck Oil Co. 3 ..... dry

Calhoun County—

Cooper, Thos. Crowley Oil Co. 2..... gas
Deweese, Hope C. & R. Co. 1 1
Plant, Hope Gas Co. 1 ..... gas
Dailey, Hope Gas Co. 2 ..... gas
Stump, Bickel Bros. 4 15

Clay County—

Phillips, Virginia G. & O. Co. 1..... gas

Lincoln County—

Scraggs, Roy & McComas 1 ..... gas
Madden, Moore Rock O. & G. Co. 2 ... gas
Browning, Laurel Dev. Co. 2 ..... gas
Cline, Columbia G. & E. Co. 1..... dry
Nidy, Cambridge Gas Co. 1 ..... gas

Kanawha County—

Rollins, U. F. G. Co. 1 ..... gas
Hulings-Cobb U. F. G. Co. 1 .....gas
Jarrett, U. F. G. Co. 1 ..... gas
Halstead, U. F. G. Co. 1 ..... gas
Cobb, U. F. G. Co. ..... gas
Vickers, Columbia Carbon Co. 1 ..... gas
Bradford, U. F. G. Co. 1 ..... gas
Bradford, U. F. G. Co. 2 ..... dry

Cabell County—

Hardin, Ohio Fuel Oil Co. 1 ..... gas
Harshbarger, Zogg O. & G. Co. 2 ..... gas

Logan County—

Yawkey-Freeman, So. P. O. Co. 5 ..... gas
Guyan Mercantile Co. Wacatock O. & G. Co. 1 ..... gas

Boone County—

Williams Coal Co., Pure Oil Co. 202 ... 20
Fuel Land Co. Owens B. & M. Co. 1... gas

Wells completed	73
Production	94
Dry	17
Gas	44

LEWIS COUNTY

Rigs

Yoke, Hope Gas Co. 1.

Wells Drilling

Rhodes, Hope Gas Co. 1.
Watson, McCall O. & G. Co. 1.
Horner, Roy Horner 1.
Daugherty, T. M. Cain & Co. 1.
Hughes, Reserve Gas Co. 1.
Burnside hrs. So. P. O. Co. 1.
Simons, Hope Gas Co. 1.

HARRISON COUNTY

Rigs

Harbert, Carosh Gas Co. 1.

Wells Drilling

Benedum, Salem Oil Co. 2.
Goodwin, So. P. O. Co. 10.
Lanhan, Delva Tex Gas Co. 1.
McIntyre, Hope Gas Co. 1.

PRESTON COUNTY

Wells Drilling

Gordon, Hope Gas Co. 1.

MARION COUNTY

Fleming, Davenport O. & G. Co. 1.
Brownlee, Owens B. & M. Co. 1.
Cunningham, Owens B. & M. Co. 1.
Blackshere, So. P. O. Co. 20.
Vaugh, R. P. W. Co. 1.
Duhurst, So. P. O. Co. 4.
Clayton, Owens B. & M. Co. 1.
Huey, Morgantown Oil Co. 1.
Southern, Riter O. & G. Co. 1.

MONONGALIA COUNTY

Wells Drilling

Price, Mfrs. L. & H. Co. 1.
Tennant, So. P. O. Co. 1.
T. Tennant, Clay Dist. Oil Co. 1.
Eddy, J. H. McDermott Oil Co. 1.
Fluharty, Carnegie Gas Co. 1.
L. Tennant, Hope C. & R. Co. 1.
Knutti, Cummins & Thomas 1.

WETZEL AND TYLER COUNTIES

Rigs

Cook, Cook Pet. Co. 1.
Robins, Hope Gas Co. 1.
McGinnis, H. L. Lambert 8.
Carney, Hope C. & R. Co. 1.

Wells Drilling

Steel, Silver Hill Oil Co. 1.
Peterson, So. P. O. Co. 12.
Phillips, D. Null & Co. 1.
Miller, Hope Gas Co. 1.
Cain, Hope Gas Co. 3.
Carney, Hope Gas Co. 3.
Mace, Carnegie Gas Co. 1.

MARSHALL COUNTY

Rigs

Rogerson, Wasmuth & Callahan 22.
Blake, Lynn Camp O. & G. Co. 1.
Jones, Mfrs. L. & H. Co. 2.

Wells Drilling

McClusky hrs. Waynesburg Gas Co. 1.
Boner, Decem Dev. Co. 3.
Chaney, Mfrs. L. & H. Co. 1.
Riley hrs. Wasmuth & Callahan 3.
Markey, Decem Dev. Co. 3.
Howard hrs. Mfrs. L. & H. Co. 2.

DODDRIDGE COUNTY

Rigs

Eddy McIntyre Bros. 1.
Maxwell, Phila. Oil Co. 1.
Burbridge, Gribble & Co. 2.
Kelly, Trainer & Travis 2.
Roberts, Keystone Oil Co. 4.
Henderson, Colonial Oil Co. 1.
Hudson, Continental O. & G. Co. 3.

Wells Drilling

Merritt, Hope C. & R. Co. 2.
Rollins, Murphy Oil Co. 4.
Britton, Phila. Oil Co. 2.
Douglass, Trainer & Travis 3.
Burbridge, Maxwell & Henderson 1.
Knight hrs. Henry & Co. 1.
Haymond hrs. Barker & Smith 1.
Collins, E. M. Treat O. & G. Co. 16.
Kyser, Hope C. & R. Co. 1.
Smith, Roy Shinn 1.
S. E. Smith, Clifton O. & G. Co. 4.
I. M. Smith, Carter Oil Co. 3.

RITCHIE COUNTY

Rigs

Summers, Hope Gas Co. 1.
W. Va. Tract, Whitewood Oil Co. 29.
W. Va. Tract, Reese & Co. 30.
Mason, P. H. McDougan 1.
Pope, E. E. Pope 2.
Garrison, J. D. Nester 1.
Lamp, Neely & Co. 4.
Dearman, Dearman & Co. 1.
Lambert, H. L. Lambert 1.
Pointer, H. L. Lambert 1.

Wells Drilling

Douglass, Hope Gas Co. 1.
Summers, Hope Gas Co. 1.
Goff, Carnegie Gas Co. 1.
Flesher, Pgh. & W. Va. Gas Co. 1.
Gambrill, E. E. Pope 7.
W. Va. Tract, Burk Bros. 21.
Howell, Moore & Co. 1.
Rector, J. F. Rector & Bro. 2.
Jonaes, Coss O. & G. Co. 3.
Coplin, Leeton & Zinn 1.
Marsh, Phila. Oil Co. 6.
Tibbs, Quinque O. & G. Co. 1.
Jackson, Penn Royal Oil Co. 5.
Lowther, Penn Royal Oil Co. 3.
Scott, L. Rinehart. 1.
Williams, Nay & Williams 1.

GILMER COUNTY

Rigs

Goff, So. P. O. Co. 8.
Hardman, So. P. O. Co. 6.
Bush-Holt, Hope Gas Co. 2.
Richards, Chemical Oil Co. 1.

Wells Drilling

Bennett, Hope Gas Co. 5.
Weaver, So. P. O. Co. 9.
Frederick, Hope C. & R. Co. 1.
Gill, Hope C. & R. Co. 2.
Blankenship, Pine O. & G. Co. 1.
Whipkey, G. L. Cabot 1.

BRAXTON COUNTY

Wells Drilling

West, Campbell & Co. 1.

WIRT COUNTY

Hays, Hope C. & R. Co. 2.
Daubenspeck, A. F. Daubenspeck 3.
Anderson, W. C. Patterson 11.

WOOD COUNTY

Wells Drilling

Drain hrs. Henderson Oil Co. 5.
Dye hrs. Park Bowser 1.
Putnam, N. Y. Pet. Co. 11.
Cogden, Peevy Oil Co. 1.

PLEASANTS COUNTY

Wells Drilling

Newland, White & Casper 1.
Hammett hrs., Faith O. & G. Co. 3.
Ross Eat, Aetna O. & G. Co. 11.

ROANE COUNTY

Rigs

Brown, Heck Oil Co.
Meadows, W. P. Heater 1.
Daugherty, U. F. G. Co. 7
Bartlett, Carter Oil Co. 1.
Rinnion, Carter Oil Co. 1.
Henderson, Spencer O. & G. Co. 1.
Burrows, Heck Oil Co. 1.
Young, Richardson & Co. 1.

CALHOUN COUSTY

Rigs

Burnell, Hope Gas Co. 1.

Wells Drilling

Crowley, M. F. Crowley 1.
Hardman, Hope C. & R. Co. 1.
Davis, Hope C. & R. Co. 1.
Roberts, Pell & Newsan, Federal O. & G. Co. 16.
Marshall, Hope Gas Co. 1.
Rice, Hope Gas Co. 6.
Holloway, Hope Gas Co. 1.
Stump, Chartiers Oil Co. 1.
Ayers, Hope Gas Co. 1.

JACKSON COUNTY

Wells Drilling

McCoy, Henderson Oil Co. 1.

CLAY COUNTY

Rigs

King hrs., White Sand Pet. Co. 2.

LINCOLN COUNTY

Rigs

Adkins, Orlando O. & G. Co. 3.

Wells Drilling

Walls, Columbia G. & E. Co. 1
Adkins, Superior Gas Co. 1.
A. Adkins, Cambridge Gas Co. 2.
Peck, Foote O. & G. Co. 2.
Thacker, C. C. Wolf 2.
Bank, Ray Gas Co. 1.
Stewart, Roy & Son 3.
Sweetland, L. R. Sweetland 3.
Goode, West Side Gas Co. 1.
Goode, W. C. Kingery 1.

PUTNAM COUNTY

Rigs

McCallister, U. F. G. Co. 1.

Wells Drilling

Johnson, U. F. G. Co. 1.
Johnson, Bryant & Johnson 1.
Henderson, L. R. Sweetland & Co. 1.

BOONE COUNTY

Rigs

Bull Creek C. & L. Co., Owens B. & M. Co. 2.
Bedford, Owens B. & M. Co. 7.
Casingham, Owens B. & M. Co. 7.

Wells Drilling

Williams Coal Co., Pure Oil Co. 222.
L. R. & P. Tract B., Pure Oil Co. 15.
Coal River M. Co., Owens B. & M. Co. 4.
Bull Creek C. & L. Co., Owens B. & M. Co. 2.
Pond Fork C. Co. Owens B. & M. Co. 2.
Fryor-Allen, Owens B. & M. Co. 10.
Casingham & Co., Owens B. & M. Co. 6.
Smoot, Owens B. & M. Co. 1.
Yawkey-Freeman, So. P. O. Co. 10, 11.

CABELL COUNTY

Jordan, Harshbarger O. & G. Co. 2.
Grass, Fox & Co. 1.

Wells Drilling

Nixon, Aetna O. & G. Co. 1.
Hagar, Midway City G. Co. 1.
Templeton ,C. O. Nixon & Co. 1.
Walton, Walton O. & G. Co. 3.
Swann, Star Pet. Co. 1.

LOGAN COUNTY

Rigs

Yawkey-Freeman, So. P. O. Co. 12, 13.
Dingess Run Coal Co., Wacatock O. & G. Co. 7.

Wells Drilling

Yawkey-Freeman, So. P. O. Co. 7, 8.
Guyan M. Co., So. P. O. Co. 1.
Chambers, Wacatock O. & G. Co. 1.
Dingess Run C Co., Wacatock O. & G. Co. 11.

KANAWHA COUNTY

Rigs

Kennedy, U. F. G. Co. 1.
Wickens, Columbia Carbon Co. 2.
Higginbottom, Oakland Dev. Co. 1.
Copenhaver, Copenhaver O. & G. Co. 2.
Roane Land Co., Allegheny O. & G. Co. 1.
Boyd, U. F. Co. 1 .
Imperial C. C., U. F. G. Co. 26.

Wells Drilling

Reamer-Brown, U. F. G. Co. 1.
Patterson, U F. G. Co. 1.
Jarrett, U. F. G. Co. 3.
Townsend-Young, U. F. G. Co. 1.
Beasley, Virginia G. & O. Co. 1.
Quarrier, Owens B. & M. Co. 5.
Thompkins, U. F. G. Co. 1.
Cassingham-Skinner, So. P. O. Co. 2.
Black Band Fuel Co., So. P. O. Co. 4.
Rigs, 49; wells drilling, 147; total, 196.

LIMA FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Tot
Wood	9	79	2	0	2	17	19
Hancock	3	71	1	0	0	3	3
Allen	4	38	1	0	0	6	6
Auglaize	2	20	1	0	0	3	3
Sandusky	2	25	1	0	0	4	4
Mercer	4	25	0	1	1	4	5
Van Wert	0	0	0	0	0	1	1
Seneca	1	4	0	0	0	1	1
Lucas	1	0	0	0	0	1	1
Ottawa	2	11	0	0	0	1	1
Darke	1	0	0	0	0	1	1
Shelby	5	36	1	0	0	2	2
Hardin	0	0	0	0	0	2	2
Paulding	3	82	1	0	0	1	1
Defiance	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	7	7
Michigan	0	0	0	0	0	1	1
Total Mar.	27	395	8	2	3	55	61
Total Feb.	26	296	7	0	5	40	45
Difference	11	99	1	2	4	15	16

WELLS COMPLETED

WOOD COUNTY

Freedom—T. Zepernick, Ohio Oil 2 ..... oil
Plain—Harley Avery, Schmidt, Hamman & Huston 2 2
O. D. Rager, Ohio Oil 1 1
Bloom—R. Whitacre, Maxwell & Harkness 32 ..... dry
Mary Shoemaker, Ohio Oil 22 ..... oil
N. Bedell, Ohio Oil 6, 7, 8, 9, 10, 13 oil
N. W. O. Nat. Gas, Ohio Oil 4 ..... oil

S. Ketzenberger, Ohio Oil 7, 8 ..... abd
Liberty—S. M. Cook, Ohio Oil 17 7
Mary Wallace, Marcer & Ray 17 15
Portage—Henry Myers, Ohio Oil 23 ... abd
I. Nestlerode, Ohio Oil 31 ..... abd
M. S. Rouse, Mattie S. Rouse 23 .... dry
Perrysburg—D. Lahy, W. F. Johnson 7 5
Alex Beard, Lew W. Johnson 5 25
George DeVerne, John E. Welton 3.. 5

Wells completed 9
Production 79
Dry 2
Abandoned 14

HANCOCK COUNTY

Pleasants—J. R. Heers, Bath Township Oil 5 35
Case—James E. Hudson No. 2, Ohio Oil 19 ..... dry
Eagle—Alice Stauffer, Star & Clark 2.. 40
Liberty—Justus Chase, Ohio Oil 17 .... abd
J. M. Cusac, Ohio Oil 1 ..... abd

Wells completed 3
Production 75
Dry 1
Abandoned 2

ALLEN COUNTY

Spencer—Wm. Severn, W. L. Parmenter 7 8
Wm. Severn, W. L. Parmenter 8 15
Ed Reynolds, South Fork Oil 2 7
Marion—D. H. Counsellor, Ohio Oil 9.. 8

Wells completed 4
Production 38

AUGLAIZE COUNTY

Moulton — John Musser, Fowler Bros. Pet. 1 ..... dry
Jackson—M. Steimman, D. F. Mooney & Co. 2 20

Wells completed 2
Production 20
Dry 1

SANDUSKY COUNTY

Jackson—Rineboldt, B. J. Rineboldt 5.. 25
Madison — Lewis Donnells, Lewis Donnells & Son 1 ..... dry
Sandusky—Walter Root, Root Oil 1 ... abd

Wells completed 2
Production 25
Dry 1
Abandoned 1

MERCER COUNTY

Gibson—Henry Leckner, Eaibel & Co. 3 7
Granville—J. H. Lange, Iron Mountain Oil 1 ..... abd
Butler—Malinda Beeame, Lauber Oil & Gas 1 ..... gas
Liberty—Brehm Bros. Celina Petroleum 3 15
Union — Griffin & Boroff, Christy & Jacobs 9 ..... abd
Jacob Sherer, E. A. Kuhns & Co. 1, 2, 3, 4, 5 ..... abd
Hopewell—P. C. Miller, June Oil 4 3

Wells completed 4
Production 25
Gas 1
Abandoned 7

SENECA COUNTY

Jackson—Mary A. Miller, G. W. Michaels 5 4

LUCAS COUNTY

Waterville—U. G. Denman, Waterville Gas & Oil 2 ..... gas

OTTAWA COUNTY

Harris — A. Barkhow, The Zorn-Hornung Oil 1 1
J. D. Smith, Gus Magsig & Son 6.... 10

Wells completed 2
Production 11

DARKE COUNTY

Mississinewa—John Miller, S. G. & J. L. Henderson 12 ..... dry

SHELBY COUNTY

Cynthian—F. B. Miller, Slagel & Johnson 1 3
T. Turner, Lee A. Watson 1 3
B. Miller, Cashdollar Oil 1 5
A. Bolheimer, Bolheimer O. & G. 1.. 25
John Bergman, Lyons & Co. 2 ..... gas

Wells completed 5
Production 36
Gas 1

PAULDING COUNTY

Harrison — C. C. Springer, John T. Schunk 2 76
Chas. Stitcher, Lemunyoun Bros. & Co. ..... dry
Brown—W. H. Patterson, Roger L. Dill & Co. 2 5

Wells completed 3
Production 82
Dry 1

WOOD COUNTY
Rigs
Plain—Joe Lane, Ladd & Morrison 4.
Perrysburg—H. Grolle, Wm. G. Grolle 2.
Wells Drilling
Freedom — Byron Brookover, J. Ed Matzinger 9.
Bloom—C. A. Browning, Clark A. Browning 26.
N. W. Ohio Gas, Ohio Oil 29.
F. B. Loose, Western Ohio Oil 3.
S. B. Newcomer, Ohio Oil 8.
Henry—B. A. Lawrence, Ohio Oil 43.
Liberty—Frank Stratton, Ogden G. Rouse & Co. 36.
D. W. Levers, Hulse & Kundtz 4.
Portage—C. Potter, F. W. Munn 5.
Lake—Emil Brendt, Chas. F. Zeising & Co. 7.
Fred Schulte, Lantz, Gregg & Schulte 6.
Rigs, 3; wells drilling, 11; total, 13.

HANCOCK COUNTY
Rigs
Eagle—J. W. McClelland, S. Porter & Co. 3.
E. M. Crozier, J. M. Steen & Co. 27.
Wells Drilling
Eagle—J. W. McClelland, S. Porter & Co. 3.
Levi Gerby, Dave King Jr. & Co. 7.
Biglick—D. Chambers, R. Allen & Co. 1.
Rigs, 2; wells drilling, 3; total, 5.

ALLEN COUNTY
Wells Drilling
Spencer—Wm. Severn, W. L. Parmenter 9.
Ed Reynolds, South Fork Oil 3.
Amanda—Bailey heirs, W. W. Rocks 1.
Wells drilling, 3.

AUGLAIZE COUNTY
Wells Drilling
Mounton—Mary Tester, Cliff Blair & Co. 3.
Morris heirs, Kelley Bros. 1.
Salem—W. E. Miller, Duke & Galloway 1.
Douchouquet—J. F. Kohler, C. C. Romshe 4.
George Metzger, The Boston-Southwestern Oil & Gas 1.
Chas. Frech, The Boston-Southwestern Oil & Gas 1.
Fred Presser, Fowler Bros. Pet. 2.
Logan—Chas. McPherson, E. E. Loeber 1.
Wells drilling, 8.

SANDUSKY COUNTY
Wells Drilling
Jackson-Rineboldt, B. J. Rineboldt 6.
E. Hummell No. 2, North Lima Oil 11.
Madison—Sylvia M. Ladd, Ohio Oil 5.
Wells drilling, 3.

MERCER COUNTY
Rigs
Hopewell — George F. Hellworth, Home Banking Co. 4.
Wells Drilling
Gibson—L. Rummell, Delta Oil 2.
Hopewell—C. C. Ricketts, E. A. Kuhns & Co. 4.
Washington — Florence heirs, Callahan & Hughes 2.
Butler—John Dues, R. E. Young & Co. 1.
Rigs, 1; wells drilling, 4; total, 5.

VAN WERT COUNTY
Rigs
York—T. R. Hughes, The Lima Trust 7.
Wells Drilling
Ridge—J. E. Moore, Calvin Neely 2.
Willshire—A. J. Cully, J. H. Harmon 1.
Harrison—S. E. German, Bolyard, Burnett & Co. 2.
Pleasants—M. H. Hoffman, American Engineering 2.
Rigs, 1; wells drilling, 4; total, 5.

SENECA COUNTY
Wells Drilling
Clinton—Katherine Akers, Arthur Geyer & Co. 1.

LUCAS COUNTY
Wells Drilling
Monclova—Wm. Black, Swan Creek Oil & Gas 2.
Jerusalem—R. H. & M. A. Eck, Ohio Oil 12.
Wells drilling, 2.

OTTAWA COUNTY
Wells Drilling
Harris—W. E. Stewart, Gus Magsig & Son 4.

DARKE COUNTY
Wells Drilling
Wayne—Margaret Paulis, Lee A. Watson 2.

SHELBY COUNTY
Wells Drilling
Cynthian—H. Sherman, Lee A. Watson 1.
Anna Eilerman, Eilerman Oil 5.
A. Bolheimer, Bolheimer Oil & Gas 2.
B. Miller, Cashdollar Oil 2.
Laramie—H. Pauls, O. J. McGuiggan & Co. 1.
Wells drilling, 5.

HARDIN COUNTY
Wells Drilling
McDonel—Erwin Hites, Rounhead Oil & Gas 6.
Earl Hites, Schmidt & Co. 2.
Wells drilling, 2.

PAULDING COUNTY
Rigs
Harrison—A. W. Miller, Aetna Drilling 1.
C. C. Sringer, John T. Schunck 4.
A. M. Bailey, U. S. A. Oil 4.
Wells Drilling
Harrison—C. C. Springer, John T. Schunck 3.
A. M. Bailey, U. S. A. Oil 3.
Rigs, 3; wells drilling, 2; total, 5.

DEFIANCE COUNTY
Wells Drilling
Adams—Adams Township Oil & Gas 1.

CRAWFORD COUNTY
Wells Drilling
Galion—Town lot, Weed-Hamilton Oil 1.
Texas—Wooster Reidle, The Sun Oil 2.
Wells drilling, 2.

MICHIGAN
Wells Drilling
Dundee—Frank Roe, Jackson County Oil & Gas 1.

JACKSON COUNTY
Wells Drilling
Napoleon—Silvers, Jackson County Oil & Gas 1.

CENTRAL OHIO

Summary of Field Operations

	Comp.	Pro.	Dry	Gas	Rigs	Drlg	Tl
Licking ...	0	0	0	0	0	1	1
Ashland ...	1	0	0	1	4	4	8
Medina	0	0	0	0	2	8	10
Lorain	1	0	0	1	1	4	5
Wayne	9	25	3	4	2	6	8
Richland ..	0	0	0	0	0	1	1
Vinton ...	0	0	0	0	0	1	1
Holmes	11	80	1	8	10	15	25
Jackson ...	0	0	0	0	4	1	5
Athens	2	0	1	1	7	3	10
Meigs	1	10	0	0	0	1	1
Summitt ...	1	0	1	0	0	0	0
Cuyahoga ..	1	0	1	0	0	0	0
Lawrence ..	0	0	0	0	0	1	1
Huron	0	0	0	0	0	1	1
Tl. Mar. 27	27	115	7	15	30	47	77
Tl. Feb. .. 39		5	9	29	37	56	93
Difference	12	110	2	14	7	9	16

WELLS COMPLETED
ASHLAND COUNTY
Hanover—Casper Paul, Ohio Fuel Gas 1 gas
LORAIN COUNTY
Grafton—Fred Klineck, Logan Gas 2.. gas
WAYNE COUNTY
Milton—C. Krause, Chas. Daugherty Co 1 ..... dry
Cannan — J. Leaman, Empire Gas & Fuel 1 ..... dry
J. Leaman, Empire Gas & Fuel Co. 2 gas
C. E. E. Sells, East Ohio G. Co. 2.. gas
H. H. Armstrong, Brinkerhoff & Co. 4 15
S. L. Whonsettler, Ohio F. G. 2..... 10
J. Gingery, Central O. & G. 1..... dry
J. Ginery, Central O. & G. 2 ..... gas
R. C. Cockrell, Charles Hower & Co. 2 gas

Wells completed 9
Production 25
Dry 3
Gas 4

HOLMES COUNTY
Monroe—Thos. P. Connor, East Ohio Gas 5 ..... gas
B. C. Bird, East Ohio Gas 1 ..... gas
U. S. Davenport, Empire G. & F. 3.. gas
Oscar Korns, Empire G. & F. 3..... gas
T. T. Finney 3, Empire G. & F. 1... gas
Prairie—Homer A. Bell East Ohio G 1 gas
Hardy—James Uhl, East Ohio G. 3..... 35
S. H. Sterling, East Ohio G. 1 45
Kilbuck—A. Purdy, The Pure Oil 1.... gas
E. Carpenter, A. L. Harbison & Co. 6 dry
Harvey Herman, Carter Oil 1 ..... gas

Wells completed 11
Production 80
Dry 1
Gas 8

ATHENS COUNTY
Rome—G. S. Parker, Stephens & Yowman 4 ..... dry
Lodi—J. B. Crawford, Russell, Beal & Vandergrift 2..... gas

Wells completed 2
Dry 1
Gas 1

MEIGS COUNTY
Sutton—Robt. Crow No. 2 Ohio Fuel Supply 1 10

SUMMITT COUNTY
Richfield—E. J. Cornell, East Ohia Gas 1 ..... dry

CUYAHOGA COUNTY
Strongville — Gust Stalter, East Ohio Gas 2 ..... dry

LICKING COUNTY
Rigs
Eden—Maggie Oatman, Wehrle Interests 1.
ASHLAND COUNTY
Rigs
Hanover—Howard Brookover, Logan Gas 2.
J. W. Sellers, Logan Gas 1.
Orange—J. J. Brown 6, Logan Gas 1.
Greene—Martha Bowan, Logan Gas 2.
Wells Drilling
Hanover—C. D. Maxwell, Ohio Fuel Gas 1.
Rhoda Black, Ohio Fuel Gas 1.
Orange—J. R. McConnell, Logan Gas 1.
Greene—C. Casner, Ohio Fuel Gas 1.
Rigs, 4; wells drilling, 4; total, 8.

MEDINA COUNTY
Rigs
Harrisville—J. S. Wisler, Logan Gas 1.
Lafayette—Hipolite Karns, Ohio Fuel Gas 1.
Wells Drilling
Harrisville—F. E. Richardson, East Ohio Gas 1.
Montville—J. K. Nold, Ohio Fuel Gas 1.
Chatham—George W. Packard No. 2, E. R. Edson & Sons Co. 11, 12.
York—Ada G. Swartz, Ohio Fuel Gas 1.
Brunswick — Gabriel Kovach & Co., Ohio Fuel Gas 1.
Westfield—Mack S. Sterns, Ford, Brookhart & Co. 1.
Spencer—S. & M. Bowand, Eppenour-McClelland & Lewis 1.
Rigs, 2; wells drilling, 8; total, 10.

LORAIN COUNTY
Rigs
Columbia—J. E. Greenwalt, East Ohio Gas 1.
Wells Drilling
Columbia—G. & J. Harold, East Ohio Gas 2.
Thos. Armitage, Empire Gas & Fuel 1.
Ring, Wiser Oil 1.
F. C. Akens, Daugherty Bros. 1.
Rigs, 1; wells drilling, 4; total, 5.

WAYNE COUNTY
Rigs
Milton—C. W. & L. B. Flick, East Ohio Gas 1.
Cannan—W. Shoemaker, Empire Gas & Fuel 1.
Wells Drilling
Wooster—Jas. M. Corroll, Ohio Oil 3.
Peter Shelley, Ohio Oil 1.
Cannan—M. S. Shoemaker, Empire Gas & Fuel 1.
Jacob Sell, Logan Gas 3.
H. Rock, Wm. Denny & Co. 1.
J. Gingery, Central Oil & Gas 3.
Rigs, 2; wells drilling, 6; total, 8.

RICHLAND COUNTY
Well Drilling
Franklin—J. Lantz, Coyle & Matthews 2.

VINTON COUNTY
Well Drilling
Clinton—E. C. Wartman, Ohio Fuel Gas 5.

HOLMES COUNTY
Rigs
Monroe—Chas. Barnes, Ohio Fuel Gas 4.
B. P. & L. Uhl, Ohio Fuel Gas 3.
M. G. Bird, East Ohio Gas 3.
C. M. Shanks, East Ohio Gas 4.
McCullough, East Ohio Gas 1.
W. & L. Armstrong, Klise-Eckstein McCann Oil 1.
W. R. Parson, Norwood Oil 2.
U. S. Davenport, Empire Gas & Fuel 4.
Prairie—L. A. Sowash, East Ohio Gas 2.
David Anderson, East Ohio Gas 1.
Wells Drilling
Monroe—B. P. & L. Uhl, Ohio Fuel Gas 2.
Edwin M. Martin, Ohio Fuel Gas 1.
F. C. Close, East Ohio Gas 1.
W. R. Parson, Norwood Oil 1.
Davis Pyers, Norwood Oil 1.
Byron Martin, Empire Gas & Fuel 1.
Elmer E. Connor, Empire Gas & Fuel 1.
Prairie—Wm. H. Miller, The Pure Oil 2.
Richland—W. M. Manchester, East Ohio Gas 1.
Hardy—James Uhl, East Ohio Gas 4.
J. Clark Smith, East Ohio Gas 1, 2.
S. H. Sterling, East Ohio Gas 2.
S. S. Troyer, Empire Gas & Fuel 2.
Kilbuck—Albert W. Schonaver, Ohio Oil 1.
Rigs, 16; wells drilling, 16; total, 26.

JACKSON COUNTY
Rigs
Coal—R. B. Rice, Ohio Fuel Supply 1.
Franklin—George W. Westlake, Ohio Fuel Supply 1.
Washington—S. E. Oghier, Ohio Fuel Gas 1.
Mary O. Anthony, Ohio Fuel Gas 1.
Wells Drilling
Coal—C. W. Hazlett, Ohio Fuel Supply 1.
Rigs, 4; wells drilling, 1; total, 5.

ATHENS COUNTY
Rigs
Carthage—Oscar Clark, Ohio Fuel Gas 4.
Dana T. Burns, Ohio Fuel Gas 2.
Troy—C. G. Ford, Ohio Fuel Supply 1.
Nettie Richardson, Ohio Fuel Supply 1.
Rome—P. D. Patton, Ohio Fuel Supply 1.
Frank Crippin, Ohio Fuel Supply 1.
Lick—Eliza Cherrington, Ohio Fuel Supply 1.
Wells Drilling
Carthage—J. J. Gaston, Wm. Hawkins & Co. 4.
J. McKinley, McBride & Co. 2.
York—Stephen Atnot, Stevens & Co. 4.
Rigs, 7; wells drilling, 3; total, 10.

MEIGS COUNTY
Wells Drilling
Sutton—E. Williams, Ohio Fuel Supply 1.

LAWRENCE COUNTY
Wells Drilling
Aid—George Carlyle, Ohio Fuel Supply 1.

HURON COUNTY
Wells Drilling
New London—Henry T. Thudun, Logan Gas 1.

ILLINOIS FIELD

Summary of Field Operations

	Comp.	Prod.	Dry	Rigs	Drg.	Ttl.
Clark	5	148	0	0	10	10
Crawford	2	4	0	0	3	3
Lawrence	1	25	0	0	2	2
Marion	1	0	1	0	0	0
Wabash	4	365	2	3	5	8
Douglas	0	0	0	0	1	1
Union	0	0	0	0	1	1
Jasper	0	0	0	0	1	1
Coles	1	0	1	0	1	1
Edwards	0	0	0	1	0	1
McDonough	0	0	0	0	1	1
Fayette	0	0	0	1	0	1
Jackson	2	30	0	0	5	5
Total March ...	16	572	4	5	30	35
Total Feb.	8	140	4	2	19	21
Difference	8	432	0	3	11	14

WELLS COMPLETED
CLARK COUNTY
Casey—C. W. Slater, Gillette Oil Corp. 2 23
C. W. Slater, Gillette Oil Corp. 3 ... 50
Martinsville—Harriett Slater, Titus Oil 2 65
Parker—Hattie Briscoe, Shrider & Co. 1 5
G. L. Wiser, Lusk & Stratton 1 6

Wells completed 5
Production 148

CRAWFORD COUNTY
Martin—W. L. Hughes, Dinsmore Oil 19 2
A. J. Thomas, Dinsmoore Oil 1, 2, 3.. abd
Robinson—Johnson heirs, Homer Baker & Co. 1 2
Prairie—Chas. Grundy, Root, Penman & Co. 2 ..... abd
Francis Wilson, D. D. Nolan 1..... abd

Wells completed 3
Production 4
Abandoned 6

LAWRENCE COUNTY
Dennison — E. J. Seed, Big Four Oil & Gas 35 25
Lawrence—Infirmary, Ohio Oil 8, 9.... abd
Bridgeport—J. T. Riggs No. 1, Ohio Oil 10 ..... abd

Wells completed 1
Production 25
Abandoned 3

MARION COUNTY
Centralia—Miller-Mackey, Bayes & Co. 1 ..... dry

WABASH COUNTY
Wabash—W. F. Courter, Hartman, Parrott & Young 2 135
W. F. Courter, Hartman, Parrott & Young 3 230
A. R. Biehl, Coons Creek Oil 5 ..... dry
E. Hutchinson, Dewees & Smith 1... dry

Wells completed 4
Production 365
Dry 2

COLES COUNTY
Charleston—C. E. Jodry, H. McCurdy & Co. 1 ..... dry

CLARK COUNTY
Wells Drilling
Casey—C. W. Slater, Gillette Oil Corp. 4.
Wheeler Baker, Arkansas Fuel Oil 2.
Martinsville—Harriett Slater, Titus Oil 3.
Nettie Baker, W. S. McBride, Inc. 5.
E. R. Ault, Trenton Rock Oil 8.
James Carper, Trenton Rock Oil 11.
Parker—G. L. Wiser, Lusk & Stratton 2.
Hattie Briscoe, Shrider & Co. 2.
Johnson—Chas. Snearley, Squires & Co. 13.
Marshall—North of Marshall, R. E. Merrifield & Co. 1.
Wells drilling, 10.

CRAWFORD COUNTY
Wells Drilling
Oblong—Edward Henry, Dinsmoor Oil 3.
Robinson—N. C. Boyd, Burns & Co. 4.
Martin—Brybaker, W. W. Splane 9.
Wells drilling, 3.

LAWRENCE COUNTY
Wells Drilling
Lawrence—G. C. Dunlap, Samuels, Duffield & Co. 10.
Wm. Tilbert, A. B. Bement 1.
Wells drilling, 2.

WABASH COUNTY
Rigs
Wabash—John Keyser, Peck & Hughes 2.
Holson—Dorney, Wiedner, Smith & Co. 2.
Mt. Carmel—John Geiger, Andrews & Smith 1.
Wells Drilling
Wabash — R. & E. Higgins, Wirebaugh & Ballard 1.
H. A. Price, Wirebaugh & Ballard 2.
C. E. Courter, Whiteside & Co. 2, 3.
Rance Higgins, Timberlake & Co. 1.
Rigs, 3; wells drilling, 5; total, 8.

DOUGLAS COUNTY
Wells Drilling
Sargent—W. E. Brown, Douglas Oil 1.

UNION COUNTY
Wells Drilling
Bald Knob—Near Alta Pass, W. MacSmith 1.

JASPER COUNTY
Wells Drilling
Smallwood — N. Cunningham, George Vanders 1.

COLES COUNTY
Wells Drilling
Ashmore—Ernest Courtney, H. McCurdy & Co. 1.

EDWARDS COUNTY
Rigs
North of Graysville—George Porter & Co. 1.

McDONOUGH COUNTY
Wells Drilling
Lamoine—Adams, Charles Measley 1.

FAYETTE COUNTY
Rigs
Poe—John Baxter, H. McCurdy & Co. 1.

JACKSON COUNTY
Wells Drilling
Bradley—Rickenburg, Mid-Egypt Oil & Gas 3.
Rickenbaugh No. 1, Mid-Egypt Oil & Gas 6.
Arley, Unknown 1.
George Ziebold, Unknown 1.
Section 14, Unknown 1.
Wells drilling, 5.

INDIANA FIELD

Summary of Field Developments

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Jay	0	0	0	0	2	2	
Adams	0	0	0	0	1	1	
Delaware	0	0	0	0	2	2	
Randolph	0	0	0	0	1	0	1
Gibson	1	0	1	0	0	1	1
Pike	2	105	1	0	0	2	2
Sullivan	3	20	0	1	0	0	0
Hendricks	0	0	0	0	0	1	1
Jackson	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Knox	0	0	0	0	0	1	1
Allen	0	0	0	0	0	1	1
Spencer	0	0	0	0	0	1	1
Total Mar...	6	125	2	1	1	14	15
Total Feb...	7	70	3	0	1	11	12
Difference..	1	55	1	1	0	3	3

WELLS COMPLETED
GIBSON COUNTY
Center—Sam Mussey, Murphy Oil 1 ... dry

PIKE COUNTY
Monroe—T. J. Parner, Ohio Oil 1 105
W. Owens, Tichenor & Co. 1 ..... dry

Wells completed 2
Production 105
Dry 1

SULLIVAN COUNTY
Gill—James Springer, Fred Bays 2 .... gas
Turman—Russell Abell, Farmers Oil & Gas 2 15
W. W. Harris, J. F. Bolmyer & Co. 2 5

Wells completed 3
Production 20
Gas 1

JAY COUNTY
Wells Drilling
Penn — C. C. Harris, Geological Products Corp. 3.
Richland—A. N. Wilson, C. E. Whittengill 1.
Wells drilling, 2.

ADAMS COUNTY
Wells Drilling
Wabash—J. H. Barr, D. L. Thompson 6.

DELAWARE COUNTY
Wells Drilling
Delaware—L. M. Coons, Clark & Hawkins 7.
C. H. McNally, W. W. Hawkins 3.
Wells drilling, 2.

RANDOLPH COUNTY
Rigs
Greene—W. Cline, T. O. Thorp 2.

GIBSON COUNTY
Wells Drilling
Barton—G. W. Harper, Consolidated Oil & Nelson 1.

PIKE COUNTY
Wells Drilling
Monroe—T. J. Parner, Ohio Oil 2.
Logan—Chas. Rumble, Miller & Davis 1.
Wells drilling, 2.

HENDRICKS COUNTY
Wells Drilling
Clay—W. E. Christy, Amo Oil 1.

JACKSON COUNTY
Wells Drilling
Near Freetown—Unknown 1.

SHELBY COUNTY
Wells Drilling
Van Buren—J. Harve Snyder, L. C. Nicholson & Co. 1.

KNOX COUNTY
Wells Drilling
Decker—P. Steckler, Walter Sargent 1.

ALLEN COUNTY
Wells Drilling
Near Baldwin—E. Stevenson 1.

SPENCER COUNTY
Wells Drilling
Dale—Section 15-4s-5w, Huppert 160 acres, Murray, Howard & Co. 1.

KENTUCKY-TENNESSEE

Summary of Field Operations

	Comp.	Prod.	Dry	Gas	Rigs	Drg.	Ttl.
Warren	10	76	3	0	0	29	29
Allen	11	18	7	0	2	18	20
Barren	26	226	3	1	2	39	41
Owensboro	3	17	0	0	1	19	20
Cumberland-Monroe	3	12	2	0	0	13	13
Russell	0	0	0	0	0	3	3
Metcalf	0	0	0	0	0	4	4
Logan	0	0	0	0	0	1	1
Simpson	0	0	0	0	1	0	1
Wayne	2	0	2	0	0	21	21
Estill	0	0	0	0	0	3	3
Wolfe	0	0	0	0	0	5	5
Lee-Owsley	11	44	3	1	1	16	17
Lawrence-Johnson	12	239	0	0	2	23	25
Johnson-Magoffin	5	15	2	0	6	14	20
Floyd	6	7	2	4	0	13	13
Elliott	2	20	1	0	0	3	3
Jackson	2	0	2	0	0	0	0
Rowan	0	0	0	0	0	2	2
Madison	0	0	0	0	0	1	1
Fleming	0	0	0	0	0	1	1
Greenup	0	0	0	0	0	3	3
Martin	1	0	0	1	0	2	2
Knox	0	0	0	0	0	1	1
Morgan	0	0	0	0	0	1	1
Bell	0	0	0	0	0	1	1
Boyd	0	0	0	0	0	1	1
Laurel	0	0	0	0	0	1	1
Harlan	0	0	0	0	0	1	1
Kentucky	94	667	27	7	15	239	254
Tennessee	0	0	0	0	5	12	17
Mississippi	0	0	1	0	7	22	29
Alabama	0	0	0	0	1	9	10
Georgia	0	0	0	0	1	4	5
Total March.	95	667	28	7	29	286	315
Total Feb...	131	1,731	38	7	28	284	312
Difference...	36	1,064	10	0	1	2	3

WELLS COMPLETED
WARREN COUNTY
Bowling Green—Allen J. C. S. Oil Corp. 1 ..... dry
Berry-Robinson, Cilder & Co. 1..... dry
C. L. Dillard, Roy Hogan 3..... 15
Vance, Illinois-Kentucky Synd. 6..... 3
Elrod, Lydia Oil 9 ..... dry
Wilson, George McGinley 2..... 15
G. Davenport, T. A. Sheridan 5..... 20
Oliver Grimes, Wood Oil 7..... 15
Ora S. Davenport, M. A. Rosansky & Co. 4..... 5
Hewetit, New Domain Oil & Gas 5.. 3

Wells completed 10
Production 76
Dry 3

ALLEN COUNTY
Scottsville—W. E. Oliver, Gainesville Oil Synd. 2..... dry
Frost, Thompson & Meredith 1..... dry
Costello, Guy & Co. 1..... dry
Lyle, Bastrus & Work 5, 6..... dry
Hornbuckle, White Plains O. & G. 8 dry
E. A. Ayres, Tynn & Co. 17 ..... dry
E. A. Ayres, Wynn, Lowe & Co. 18.. 2
J. W. Frost, R. A. McLean, 10..... 10
F. Dyson, Ruby Cons. Dev. 4..... 4
J. R. Goodrum, Andrus & Millett 2.. 2

Wells completed 11
Production 18
Dry 7

BARREN COUNTY
Glasgow—Moore, Fred Moore 7..... 16
Steffey, Essingler Oil 3..... 4
Travis, Fred Moore 5..... 11
Ritchie, Star Oil 14 8
Ritchie, Star Oil 15 12
Starr, Star Oil 6..... 8
Burris, Henderson Oil 5 4
B. Scott, Wiggins & Gillespie 8..... 16
Gooden, Carter Oil 5..... 4
Dossey, Nelson & Co. 2..... dry
Jess Winiger, Carter Oil 4..... 5
Hall-Baker, Consolidated Gas 4..... 4
Hall-Baker, Consolidated Gas 5..... 12
Hall-Baker, Consolidated Gas 6..... 20
Hall-Baker, Consolidated Gas 7..... 20
Turner, Consolidated Gas 1 ..... gas
Will, Church, Wood Oil 4..... 27
Will Church, Consolidated Gas 5..... 8
John Church, Wood Oil 3..... 8
Ben Meyers, Sanson & Co. 1..... 2
Webb, Smith & Son 1..... dry
Depp-Greer, L. J. Emery Jr. Sons 4.. 15
McLaughlin, Porter & Co. 2..... 15
Hatfield, Big Jack O. & Dev. 1..... 5
Ritter Bros. Stafford & Maxey 2..... 2
Ritter Bros., Stafford & Maxey 3..... dry

Wells completed 26
Production 226
Dry 3
Gas 1

OWENSBORO DISTRICT
Owensboro—R. M. Miller, Panther Creek Oil, 12 10
Beauchamp, C. A. Leeper 1..... 4
F. V. Miller, C. A. Leeper 1..... 3

Wells completed 3
Production 17

CUMBERLAND-MONROE COUNTIES
Burkesville—Hiram Wells Unknown 1 dry
Coffee, Young Oil 3 12
J. C. Hood, Baldensparger & Thrasher 1 ..... dry

Wells completed 3
Production 12
Dry 2

WAYNE COUNTY
Monticello—T. C. Morrow, Beaver Pet. 8 ..... dry
James Catron, Geo. A. Hook & Co. 1.. dry

Wells completed 2
Dry 2

LEE-OWSLEY COUNTIES
Idamay—Dan Galliger, Pet. Exp. 1.... dry
David Deed, Pet. Exp. 1..... dry
Hiram Gabbard, Pet. Exp. 1..... dry
Chester Gourley, Pet. Exp. 1..... 2
Chester Gourley, Pet. Exp. 2..... gas
Tom Quillan ,Pet. Exp. 1..... 2
Gourley-McGuire, The Pet. Co. 4.... 7
Gourley-McGuire, Black Gum Oil 12.. 10
Gourley-McGuire, Black Gum Oil 13.. 10
Andy Combs, Combs Bros. Dev. 5... 8
White Oak Creek, Mart Davis 1..... 5

Wells completed 11
Production 44
Dry 3
Gas 1

LAWRENCE-JOHNSON COUNTIES
North Weir—Caney Sparks, Union Gas & Oil Co. 2..... 66
C. K. Dobyne, Union Gas & Oil Co. 7 35
J. E. Holbrook, Union G. & O. Co. 2.. 15
P. P. Holbrook, Union G. & O. Co. 30 30
Jessee Rose, Indian-Tex Pet. Co. 9.. 8
G. Gillam, Indian-Tex. Pet. Co. 12.. 8
G. Gillam, Indian-Tex Pet. Co. 13.. 12
W. H. Kelley, Mid South Pet. Co. 2.. 4
Wayne Moon, Tom Haye 1..... 2
C. K. Dobyne, Garrison & Townsend 16 25
C. K. Dobyne, Garrison and Townsend 17 25
J. N. Sparks, Garrison & Townsend 2 15

Wells completed 15
Production 232

JOHNSON-MAGOFFIN COUNTIES
South Weir—On Licking River, Pure Oil Co. 1..... dry
Sam Collins, Cumberland Pet. Co. 10 4
Wireman, Hays & Rogers 1..... dry
W. S. Adams, Pet. Expl. 5..... 3
Blanch Blanton, Mid-South Pet. Co. 3 4

Wells completed 8
Production 15
Dry 2

FLOYD COUNTY
Hueyville—T. Collins, Yolondo O. Co. 1 gas
W. J. Turner, Carter Oil Co. 1..... gas
Noah Martin, Carter Oil Co. 1..... gas
J. D. Turner, Ohio Fuel Oil Co. 3.... dry
Millie Miller, Ohio Fuel Oil Co. 1.. dry
Summitt, Summitt, Oil Co. 3..... gas

Wells completed 6
Dry 2
Gas 4

ELLIOTT COUNTY
Isenville—J. F. Diles, Wheeler & Campbell 3 20
T. W. Kelley, McConnel & Co. 1..... dry

Wells completed 2
Production 20
Dry 1

JACKSON COUNTY
McKee—Unknown, Stand. Oil Co. of Ken. 1 ..... dry
At Grey Hawk ,Stand O. of Ken. 1.. dry

Wells completed 2
Dry 2

MARTIN COUNTY
Inez—Mayo properties, Leonard & Ralph 1 ..... gas

MISSISSIPPI
RANKIN COUNTY
Section 7-3-4 Fee, Finkbine Lbr. Co. 1 dry

(Western Division)
WARREN COUNTY
Wells Drilling
Bowling Green—Price-Hall, Ruby Consolidated Development Co. 6.
Jess Shanks, Amfot Oil Corp. 8, 9, 10.
W. R. Hunton, F. H. Lavelle, 7.
Gillispie, H. Z. Clark, trustee, 5.
Gillispie, Gillispie O. Corp. 10.
Bryant, Cunningham & Henry 8.
Morehead, Lucille Oil Synd. 6.
George Rigglewood, H. J. Dobson 5.
Porter, Ennis & Co. 3.
Kimbro, Rockfield Oil Co. 4.
Stanley, Boiling & Loman 1.
V. Andrews, Illinois-Ken. O. Synd. 1.
Dr. Moss, Frank Fritz, 6.
Price, Caskey & Pryor 6.
Lee Butts, Russell & Co. 4.
Ford, Roy Hogan 5.
Wilson, George McGinley 4.
G. Davenport, tract No. 2, T. A. Sheridan 7, 8, 9.
Biddle, Cadet Oil & Gas Co. 22.
Ora S. Davenport, Onsel-Harnahan 4.
Montague, Evans & Co. 1.
Hobson heirs, M. B. Williams 5.
C. A. Keller, Westland Oil Corp. 27.
Cox, Stewart & Bannon, 22.
Bronson, unknown parties 14.
Rigs, 0; wells drilling, 29; total 29.

ALLEN COUNTY
Rigs
Scottsville—Carver, McCandless & Co. 12.
Clack, Neeley, Lamp & Co. 3.
Wells Drilling
Scottsville—Lee Moore, Lee More 4.
Straight, M. W. Graham 2.
J. L. Grubbs, Rehn & Ogle 15.
W. E. Oliver, Gainesville Oil Synd. 3.
R. R. Williams, H. Grey 1.
T. Hinton, unknown parties 2.
V. A. Frost, Meredith & Co. 6.
Kennedy, Hice & Co. 3.
E. Britt, R. A. McLean 1.
J. W. Frost, R. A. McLean 11.
J. R. Hornbuckle, White Plains O. & G. Co. 8, 9.
A. W. Duke, Victor DeCaigney 11.
R. J. Dinwiddie, Work & Son 1.
Carpenter-Dent, J. W. Leach 10.
Sid Goodrum, Central Southern Oil Co. 2.
Bill Dennis, Bastrus & Co. 1.
F. Dyson, Ruby Consolidated Dev. Co. 11.
Rigs, 2; wells drilling, 18; total, 20.

BARREN COUNTY
Rigs
Glasgow—B. Scott, Wiggins & Gillispie 9.
Bybee, T. L. Gorby 1.
Wells Drilling
Glasgow—Hans Gassaway, Moore & Baker 2.
Burton heirs, Shriver & Co. 1.
Price, Stafford, Roedener 3.
Ochs, Roedner & Co. 1.
Free, Starr Oil Co. 6.
Ritchie, Starr Oil Co. 16.
Richardson, Star Oil Co. 1.
Lewis, Stafford, Scott & Co. 2.
Childress, Kopel Oil Co. 7.
Burris, Henderson Oil Co. 6.
Mack Mansfield, Wiggins & Gillespie 2.
Drennan, Ziegler Bros. 5.
Gooden, Carter Oil Co. 6.
Moore, Fred Moore 8.
Hatfield, Big Jack O. & D. Co. 2.
Everett, T. L. Gorby 1.
S. Chamberlain, T. L. Gorby 1.
John A. Dodd, Hammerly & Co. 1.
Judge Citizens Oil Co. 1.
McLaughlin, Porter & Co. 3.
John Wells, L. J. Emery, Jr. & Co. 1.
Dopp & Greer, L. J. Emery Jr. & Sons 5.
C. W. Bellamy, L. J. Emery Jr. & Sons 1.
Cox, L. J. Emery Jr. & Sons 1.
John Church, Wood Oil Co. 4.
Duff, Wood Oil Co. 1.
Harvey, Wood Oil Co. 1.
Rich, Jackson & Co. 1.
Dodder, Reese & Co. 2.
Evans, Harrington & Norris 4.
Franklin, Fred Williams 1.
Burr, Henderson & Co. 1.
Dean, T. J. Samson 1.
Preston, T. J. Sansom 1.
Ben Meyers, T. J. Sansom 2.
Jones, Esslinger & Co. 1.
Hall Baker, Cons. G. Co. 7, 8, 9.
Rigs, 2; wells drilling, 39; total, 41.

OWENSBORO DISTRICT
Rigs
Owensboro—Jess Swope, Nutty & Pyle 12.
Wells Drilling
Owensboro—M. Mosley, Mosley O. Co. 1.
Gabbard, Pellville Oil Co. 1.
Hoffler, Thomas & Co. 1.
Near Beda, Evansville parties 1.
J. O. Brown, Bert Thompson 5.
Amanda Stewart, Kentucky Oil Co. 17.
Dick Spurrier, I. N. Harkless 3.
Veach, C. A. Leeper 1.
Beauchamp, C. A. Leeper 2.
J. W. Smith, Panther Creek Oil Co. 4.
Widow Crowe, C. E. Daugherty 3, 4.
O. G. Ward, C. E. Daugherty 2.
Col. Powers, Penns-Ind. Oil Co. 1.
J. H. Phillip, Penns-Ind. Oil Co. 1.
J. M. Bartley, Wood Oil Co. 3, 4.
J. H. Evans, Thomas & Co. 3, 4.
Rigs, 1; wells drilling, 19; total, 20.

CUMBERLAND-MONROE COUNTIES
Wells Drilling
Burkesville—Maude Blythe, Daniel Boone Oil & South Ken. Oil. Cos. 3.
Davidson, Wilcox Bros. 1.
Sharp, Wilcox Bros. 1.
Wess Nun, Hook & Wise 1.
Coop, Kanawha Oil Co. 3.
C. V. Williams, Cumberland Oil Synd. 1.
Bow, Judio Co. Inc. 1.
Judio Dome, Judio Co. Inc. 1.
Tompkins, Vedder Oil Co. 2.
M. C. Scott, Vedder Oil Co. 2.
Less, Butler, W. P. Mason 1.
Rathford, Richardson & Goff 1.
C. T. Cheatham, Robt. Stead 1.
Rigs, 0; wells drilling, 13; total, 13.

RUSSELL COUNTY
Wells Drilling
Creelsboro—B. F. Leach, Carnahan Oil Co. 4.
A. O. Lay, Redman & Co. 1.
N. Biesde, Creesboro parties 1.
Rigs, 0; wells drilling, 4; total, 4.

METCALF COUNTY
Wells Drilling
Edmonton—A. J. Thompson, T. Petty & Co. 1, 2.
Near Edmonton, J. C. Richards 1.
L. H. Thompson, Hartramf & Co. 1.
Bell, A. W. Richards 3.
Rigs, 0; wells drilling, 4; total 4.

LOGAN COUNTY
Wells Drilling
Auburn—Jim Peart, Mullin & Reagle 7.

SIMPSON COUNTY
Rigs
Franklin—B. F. Summers, E. M. Treat & Co. 13.

(Eastern Division)
WAYNE COUNTY
Wells Drilling
Monticello—J. N. Huffaker, Bridgman & Co. 3.
W. T. Ashberry, J. H. Hatfield 4.
P. L. Harmon, J. C. Brommer 4.
T. C. Morrow, Beaver Pet. Co. 9, 10.
Morrow, Bowden & Co. 7.
Coffee heirs, Bell Bros. 1.
A. W. Campbell, Clark O. & G. Co. 7.
J. Harve Duncan, E. G. Hogue 12.
B. S. Huffaker, Wood Oil Co. 25.
Dabney, Superior Oil Corp. 7.
C. W. Burnett, Frank Daugherty 2, 3.
Elam, Wright & Bell 1.
Upchurch, Head Brown & Co. 4.
J. A. Brown, Marsh & Shearer 2, 5.
S. Henniger, Illiken Oil Co. 2, 3.
T. T. Davis, Vulcan Oil Co. 15.
Bridgman, Spradlin & Marsh 4.
Rigs, 0; wells drilling, 21; total, 21.

WOLFE COUNTY
Wells Drilling
Torrent—Jas. Roberts, Atlantic Oil Prod. Co. 3.
Ann Horton, McCombs Prod. & Rfg. Co. 9.
E. B. Roberts, Federal Oil Co. 5.
Spencer heirs, Kentucky Star Oil Co. 3.
On L. & E. Ry., B. G. Pratt, 1.
Rigs, 0; wells drilling, 5; total, 5.

ESTILL COUNTY
Wells Drilling
Irvine—Smith, Clark & Co. 2.
J. Henry, E. W. Trook & Co. 2.
Millard Ballard, No. 1 farm, T. A. Gleason 7.
Rigs, 0; wells drilling, 3; total 3.

LEE-OWSLEY COUNTIES
Rigs
Idamay—Andy Combs, Combs Bros. 6.
Wells Drilling
Idamay—Gourley-Redman Pet. Co. 5.
Gourley-Redman Black Gum Oil Co. 14.
J. S. Comb, Unk 1.
Spencer heirs, Bush & McCandless 1.
Hamp Flannery, Atlantic Oil Prod. Co. 1, 2.
C. Gourley, Pet. Expl. 3.
Mart Absten, Pet. Expl. 1.
H. Marcum, Pet. Expl. 1.
Huntington, Huntington O. Synd. 5.
J. D. Smythe, Superior Oil Corp. 24.
Flannery, Jewell & Hobbs 1.
Daniels-Foreman, Henry Oil Co. 2.
Sturgeon Creek, Beamer & Co. 1.
New Era Land Co.'s land, D. L. Johnson 1.
Rigs, 1; wells drilling, 16; total, 17.

LAWRENCE—JOHNSON COUNTIES
Rigs
North Weir—W. E. Skaggs, Hovis & Young 3.
C. Osborne, Skaggs, Miller & Co. 1.
Wells Drilling
North Weir—J. J. Skaggs, Cumberland Pet. Co. 4.
Robt. Fyfee, Plute Oil Co. 6.
Sparks, Carter Oil Co. 1.
J. D. Bond, J. T. Hart & Son 3.
Ira Lester, Wm. Stone & Co. 7, 9.
B. R. Hamilton, David Fox 4.
J. Lyon, Keaton O. & G. Co. 29.
Lizzie Collier, Garrison & Townsend 1, 2.
L. T. Sparks, Garrison & Townsend 5.
J. N. Sparks, Garrison & Townsend 2, 3.
Foster Ferguson, Garrison & Townsend 5.
C. K. Dobyne, Garrison & Townsend 18, 19.
W. A. Bailey, Hupp & Duff 1.
P. P. Holbrook, Union Gas & Oil Co. 31.
W. D. Lester, Union Gas & Oil Co. 6, 7.
C. K. Dobyne, No. 1 farm, Union Gas & Oil Co. 8.
Caney Sparks, Union Gas & Oil Co. 3.
R. N. Sparks, No. 1 farm, Union Oil & Gas Co. 2.
Rigs, 2; wells drilling, 23; total, 25.

JOHNSON-MAGOFFIN COUNTIES
Rigs
South Weir—W. H. Collins, Pet. Expl. 3.
Eliza Powers, Clyde Oil Co. 6.
Bailey heirs, Diamond Oil Co. 4.
Sam Blanton, R. J. Gillispie 16, 17.
J. D. Moore, R. G. Gillispie 3.
Wells Drilling
South Weir—Patton Borders, Reno Oil & Gas Co. 9.
Wm. Prater, Structure Oil Co. 10.
W. F. Adams, Oliver & Jenkins 6.
H. Graco, Hudson & Collins 7.
Lesse Adams, Model Oil Co. 3.
H. Patrick, Burning Fork Synd. 1.
Julia Saylor, Magoffin Dev. Synd. 3.
C. Saylor, Bed Rock Pet. Co. 2.
J. H. Arnett, Bed Rock Pet. Co. 18.
B. F. White, Marie Oil Co. 2.
J. H. Gardner, New Domain Oil & Gas Co. 10.
S. Howard, Mid-South Pet. Co. 5, 6.
F. M. Tackett, M. A. Wheeler & Co., 1.
Rigs, 6; wells drilling, 14; total, 20.

FLOYD COUNTY
Wells Drilling
Drift—T. Collins, Yolondo Oil Co. 1.

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Kate Spencer, Eastern Carbon Back Co. 1.
Maude Cooley, Eastern Carbon Black Co. 1.
John Martin, New Domain O. & G. Co. 4, 5.
H. D. Martin, Ohio Fuel Oil Co. 1.
M. Martin, Ohio Fuel Oil Co. 1.
Tandy Martin, Louisville G. & Elec. Co. 2.
Maryland Martin, Louisville G. & El. Co. 1
Summit area, American Roller Mills 1, 2.
Kentucky Pine Coal lands, Brown & Harmon 1.
C. D. Potnack, Carter Oil Co. 1.
Rigs, 0; wells drilling, 13; total, 13.

ELLIOTT COUNTY
Wells Drilling

Sandy Hook—J. C. Hunter, Hupp, Duff & Co. 1, 2.
Bud Pritchard, Evans & Co. 1.
Rigs, 0; wells drilling, 3; total, 3.

ROWAN COUNTY
Wells Drilling

Morehead—Near Morehead, McDonald & McGuire 2.
At Mt. Hope, McKinney Bros. 1.
Rigs, 0; wells drilling, 2; total, 2.

MADISON COUNTY
Wells Drilling

Boonesboro Beach—D. J. Williams, J. N. Thompson 1.

FLEMMING COUNTY
Wells Drilling

Colfax—Unknown, Dr. Connely 1.

GREENUP COUNTY
Wells Drilling

Greenup—Tobias Burke, Engles & Co. 1.
Rueben Potter, Foreman & Co. 1.
Baglin, Young & Co. 1.
Rigs, 0; wells drilling 3; total, 3.

MARTIN COUNTY
Wells Drilling

Inez—Alfred Carter, Big Derby O. & G. Co. 1.
Mayo Properties, Leonard & Ralph, 2.
Rigs, 0; wells drilling, 2; total, 2.

KNOX COUNTY
Wells Drilling

Barbourville—Stinking Creek, Standard Oil Co. of Kentucky 1.

MORGAN COUNTY
Wells Drilling

Cannel City—Goose, Blue Hills Pet. Co. 4.

BELL COUNTY

Canada Mountain—Canada Mountain, Canada Peak Oil Co. 1.

BOYD COUNTY
Wells Drilling

Ashland—Al Bartram, Unknown parties ,1.

LAUREL COUNTY
Wells Drilling

London—Mrs. Hubbard, Piney O. & G. Co. 1.

HARLAN COUNTY

READ THE
Classified Wants
Pages 102-103-104
DO IT NOW
YOU MAY MISS A BARGAIN

Wells Drilling

Harlan—Near Colfax, Rex. G. Carpenter 1.

TENNESSEE
CLAY-JACKSON COUNTIES
Wells Drilling

Celina—Ogelothorpe, Da Foe & Co. 1.
Draper, Da Foe & Co. 2.
Ben Hix, Da Foe & Co. 1.
Ham Lynn, Da Foe & Co. 3.
Rigs, 0; wells drilling, 4; total, 4.

GIBSON COUNTY
Wells Drilling

Dyer-Holt, Rinehart Oil Corp. 1.

SUMNER COUNTY
Wells Drilling

Gallatine—Stewart-Terrell, Dr. A. T. Sims 2.

OHIO COUNTY
Wells Drilling

Trimble—M. A. Gauldin, Richards & Miller 1

MADISON COUNTY
Rigs

Jackson—Judie Howard, Cincinnati Oil 2.

HARDEMAN COUNTY
Wells Drilling

Bolivar—Brown Sans, Spring Valley Dev. 1.

FAYETTE COUNTY
Rigs

Sommerville—Joe Perry, M. A. Strickland & Co. 1.

BENTON COUNTY
Rig

Clarksville—Near Eva, Benton Oil & Gas 1.
Near Camden, Unknown 1.
Rigs, 2; wells drilling, 0; total, 2.

HAMILTON COUNTY
Rigs

Chattanooga—Near Daisy, Dryden & Co. 1.

Rigs

Dayton—Near Dayton, Unknown 1.

OVERTON COUNTY
Wells Drilling

Jamestown—Mitchell Creek, W. H. Boswell 1.

Wells Drilling
MACON COUNTY

Center of County—Jim Hayes, Catson & Co. 1.

SCOTT COUNTY
Wells Drilling

Bryant—Bryant, Superior Oil Corp. 2.

MISSISSIPPI
CHICKASAW COUNTY
Wells Drilling

Houston—Flarity, Danner Oil & Gas Trust 2.

CLAY COUNTY
Rig

West Point —Gulf Development 1.

PIKE COUNTY
Rig

Magnolia—Poor Farm Miss. Expl. 3.

FRANKLIN COUNTY
Wells Drilling

Jackson—McGhee, Fletchering & Co. 1.

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR FEBRUARY

Runs

Company—	Month	Daily Average
Prairie P. L. Co.	3,108,000	111,000
Gulf P. L. Co.	1,085,624	38,772
Texas P. L. Co.	342,603	12,236
Magnolia Pet. Co.	907,015	32,393
Cosden P. L. Co.	802,229	28,651
Empire P. L. Co.	1,000,485	35,732
Sinclair P. L. Co.	1,148,000	41,000
Other lines	7,700,000	275,000
Total Feb.	16,093,956	574,784
Total Jan.	17,839,078	575,454
Difference	1,745,022	670

Shipments

Prairie P. L. Co.	4,322,556	154,377
Gulf P. L. Co.	1,150,280	41,081
Texas P. L. Co.	680,924	24,319
Magnolia Pet. Co.	1,276,146	45,577
Cosden P. L. Co.	876,652	31,309
Empire Pipe Line Co.	909,619	32,486
Sinclair P. L. Co.	2,248,987	80,321
Other lines	7,840,000	280,000
Total Feb.	19,305,164	689,470
Total Jan.	20,946,691	675,699
Difference	1,640,547	13,771

Stocks

Prairie Oil & Gas Co.	25,400,000
Prairie Pipe Line Co.	2,000,000
Gulf Pipe Line and Gypsy Oil Co.	9,942,053
The Texas Co. and Texas P. L. Co.	4,706,419
Magnolia Petroleum Co.	8,702,580
Cosden Pipe Line Co.	2,360,698
Empire Pipe Line Co.	3,074,864
Sinclair Crude Oil Purchasing Co.	27,400,000
Carter Oil Co.	16,951,857
Other lines	10,000,000
Total February	110,538,471
Total January	112,728,264
Difference	2,189,793

Note: Stocks do not include approximately 9,000,000 bbls. held in storage on private tank farms and leases.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan., '25	Feb., '25
Nat. Transit	158,224.95	152,089.01
S. W. Pa. P. L.	75,022.06	76,044.66
Eureka P. L.	336,785.07	323,694.15
Buckeye P. L. (Macksburg)	270,937.24	257,192.02
Buckeye P. L. (Cleveland)	11,783.31	11,467.59
Buckeye P. L. (Lima, etc.)	119,433.03	121,210.85
Indiana P. L.	9,562.51	10,117.61
Cumberland P. L.	316,512.22	290,356.12
N. Y. Transit	17,233.29	18,156.30
Tidewater P. L.	125,723.35	123,151.77
Pure Oil	184,170.99	169,180.29
Emery P. L.	43,636.37	41,770.44
Indian Ref.	50,678.03	57,797.15
Paragon Dev.	34,625.09	29,522.74
Pittsburgh P. L.	6,841.87	7,359.37
Riggs Ref.	.....	3,851.29
Total	1,761,768.28	1,696,963.36
Daily average	56,831.23	60,605.83

Note—Indian Refining Co. also reported other receipts of 275,260.75 bbls. Paragon Refining Co. had other receipts of 91,522.60 bbls. Paragon Development Co. had other receipts of 3,890.47 bbls. Pittsburgh Pipe Line had other receipts of 521.35 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan., '25	Feb., '25
Nat. Transit	430,479.78	426,389.57
S. W. Pa. P. L.	352,482.72	333,592.35
Eureka P. L.	104,303.93	120,388.49
Buckeye P. L. (Macksburg)	108,833.21	95,657.49
Buckeye P. L. (Cleveland)	971.46	1,212.97
Buckeye P. L. (Lima, etc.)	737,449.65	754,903.48
Indian P. L.	1,184,796.12	1,068,925.14
Cumberland P. L.	151,651.28	142,109.90
N. Y. Transit	823,143.35	700,076.23
Northern P. L.	127,033.43	118,854.01
Tidewater P. L.	123,127.50	99,605.73
Pure Oil	184,953.81	124,856.42
Emery P. L.	42,468.57	38,829.91
Paragon Ref.	86,990.07	99,542.91
Indian Ref.	396,228.19	334,417.14
Paragon Dev.	19,862.92	27,650.36
Pittsburgh P. L.	9,893.25	7,261.61
Total	4,894,563.29	4,504,173.81
Daily average	157,889.13	160,863.35

Indian Refining Co. had other deliveries of 3,651.23 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of January and February were as follows:

	Jan., '25	Feb., '25
Nat. Transit	997,527.01	1,035,423.87
S. W. Pa. P. L.	671,522.11	686,629.94
Eureka P. L.	1,703,887.62	1,640,003.77
Buckeye P. L. (Macksburg)	327,725.42	269,748.41
Buckeye P. L. (Cleveland)	537,659.69	43,206.35
Buckeye P. L. (Lima)	3,556,916.92	3,491,690.20
Indiana P. L.	617,271.50	627,221.38
Cumberland P. L.	727,024.27	607,314.58
South P. L.	505,691.07	431,908.22
Crescent P. L.	58,217.64	58,244.28
N. Y. Transit	718,889.21	684,490.18
North P. L.	989,912.28	1,022,829.08
Pure Oil	407,274.06	454,163.71
Emery P. L.	8,880.37	11,400.75
Paragon Ref.	12,815.50	34,625.75
Indian Ref.	64,092.91	76,538.14
Paragon Dev.	13,161.62	8,591.88
Pittsburgh P. L.	4,606.45	5,210.04
Riggs Ref.	.....	3,683.39
Total	11,353,275.66	11,192,923.90
Decrease	230,403.86	160,351.76

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of January and February showing the gross stocks of the above fields:

	Jan., '25	Feb., '25
Penna	3,892,776.91	3,888,928.59
Lima	1,289,019.05	1,268,514.45
Kentucky	1,421,861.94	1,442,094.26
Mid-Cont.	4,711,600.48	4,563,791.51
Illinois	38,017.28	29,595.09
Total	11,353,275.66	11,192,923.90

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1922	1923	1924	1925
January	67,702	75,790	62,638	56,831
February	75,096	71,092	68,023	60,606
March	78,531	76,592	68,721	.....
April	75,462	75,614	71,058	.....
May	77,592	77,365	63,942	.....
June	76,193	77,593	63,230	.....
July	76,435	71,879	64,208	.....
August	79,387	76,910	59,942	.....
September	78,512	72,358	62,930	.....
October	77,209	76,256	64,976	.....
November	75,313	70,762	56,282	.....
December	73,351	69,271	55,814	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1922	1923	1924	1925
January	119,792	171,067	145,618	157,889
February	111,362	164,219	148,732	160,863
March	127,753	185,487	147,098	.....
April	127,068	170,751	147,611	.....
May	127,840	177,102	134,997	.....
June	137,638	173,598	143,010	.....
July	137,872	168,330	124,187	.....
August	153,275	142,766	123,120	.....
September	158,761	137,266	127,325	.....
October	165,345	134,597	123,170	.....
November	165,677	131,426	124,400	.....
December	172,861	139,909	151,392	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1923	1924	1925
January	14,040,567	12,907,202	11,353,276
February	14,028,437	11,844,068	11,192,924
March	13,873,146	10,906,752	.....
April	13,737,575	10,922,742	.....
May	13,815,622	11,338,309	.....
June	14,541,253	11,544,204	.....
July	14,645,584	12,062,361	.....
August	14,770,539	12,221,676	.....
September	14,803,444	12,206,836	.....
October	14,504,111	12,664,061	.....
November	14,157,726	12,268,530	.....
December	13,444,361	11,583,680	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1924—	Receipts	Shipments	Stocks
February	2,161.78	1,926.55	10,073.98
March	3,398.78	1,716.28	11,756.48
April	3,311.84	2,066.78	13,001.54
May	3,036.50	5,338.31	10,699.83
June	3,188.81	407.01	13,481.13
July	3,067.74	3,334.29	13,214.58
August	2,901.36	6.21	16,109.73
September	2,794.58	5,775.89	13,128.42
October	3,343.40	1,880.50	14,590.32
November	2,700.13	482.89	12,427.56
December	3,120.34	2,659.13	12,888.77
1925—			
January	1,730.86	1,681.15	12,938.48
February	2,702.05	4,564.70	11,075.83

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	2,369,152.97
Runs from wells	610,582.80
Other receipts	171,552.74
Regular deliveries	426,635.66
Other deliveries	396,581.29

The amount of Illinois oil run by the Tide Water Pipe Line Co. in February was 26,052.40 bbls. and deliveries were 26,025.66. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries from the Illinois Field as follows:

1924—	Runs.	Deliveries
February	535,490.70	353,613.14
March	611,289.36	369,542.51
April	514,356.43	339,546.10
May	751,080.44	510,414.43
June	726,060.87	528,493.38
July	759,646.84	562,386.59
August	720,457.75	619,336.79
September	714,876.36	536,762.80
October	741,767.43	543,863.77
November	650,147.63	521,459.31
December	640,919.28	595,942.30
1925—		
January	695,513.43	573,304.77
February	636,635.26	614,661.53

The Tide Water Pipe Co., Ltd., also delivered in February 236,246.74 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 421,878.13 bbls.

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per week—	ATLANTIC PORTS						GULF COAST PORTS						
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
October	85,379	49,000	391,069	85,603	36,127	784,056	.....	.....	.....	.....	.....	784,056
November	119,469	52,031	327,948	38,031	37,321	627,931	.....	.....	.....	.....	.....	627,931
December	67,127	16,709	386,806	81,067	15,291	561,540	.....	21,000	.....	.....	21,000	582,540
January	86,933	16,030	310,933	75,418	58,709	548,023	.....	.....	.....	.....	.....	548,023

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per week—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
October	186,826	67,515	257,418	90,818	113,127	665,704	231,903	268,816	111,097	29,351	640,967	1,306,671
November	198,569	87,500	477,631	165,410	258,531	1,187,641	383,831	380,569	94,269	19,831	878,500	2,066,141
December	166,515	25,515	269,164	83,418	246,582	689,194	220,388	358,806	76,321	51,499	707,014	1,396,208
January	129,843	113,583	440,776	60,739	191,709	936,649	205,051	398,097	100,331	28,231	731,710	1,668,359

GROSS PRODUCTION IN THE UNITED STATES FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountain	Eastern Fields	Total
March:	Month	19,913,262	13,336,851	12,044,503	2,306,426	3,582,695	1,701,598	3,827,204	3,250,600	61,163,134
	Daily average	642,363	430,231	388,532	71,176	125,247	54,890	123,460	104,858	1,973,004
April	Month	19,299,849	13,452,240	11,577,246	2,268,540	4,068,225	1,495,582	3,738,332	3,273,600	58,173,614
	Daily average	643,328	448,408	385,908	75,618	135,608	49,853	124,611	109,120	1,939,121
May	Month	19,823,576	14,247,697	11,623,395	2,469,765	4,659,117	1,596,701	3,866,010	3,264,000	61,550,261
	Daily average	639,793	459,603	374,948	79,347	150,288	51,507	124,710	105,042	1,985,493
June:	Month	18,807,999	14,447,390	11,602,350	2,469,380	4,756,443	1,812,580	3,628,624	3,252,600	60,782,366
	Daily average	626,933	481,580	386,745	82,313	158,548	60,429	121,288	108,453	2,026,079
July:	Month	19,274,755	15,191,860	11,917,137	2,671,053	4,597,969	1,816,966	3,768,398	3,271,600	63,607,738
	Daily average	621,766	490,060	384,424	86,195	148,322	58,580	121,561	108,761	2,019,637
August:	Month	19,112,998	16,525,356	11,808,876	2,717,398	4,359,241	1,702,535	3,749,375	3,286,000	63,261,769
	Daily average	616,548	533,076	380,931	87,658	140,621	54,920	120,948	106,000	2,040,702
September:	Month	18,308,223	16,299,030	11,089,492	2,638,900	4,029,575	1,796,575	3,230,007	3,150,000	60,640,772
	Daily average	610,274	543,301	369,650	87,963	134,318	59,853	111,000	101,936	2,021,359
October:	Month	18,696,559	16,189,898	10,942,005	2,768,455	3,983,696	1,774,767	3,058,263	3,235,000	60,806,586
	Daily average	603,115	522,255	353,000	89,305	128,506	57,249	98,654	109,516	1,961,567
November:	Month	17,767,084	15,955,620	10,731,264	2,597,460	3,461,050	1,965,921	2,788,110	3,941,000	58,207,459
	Daily average	592,234	531,854	357,709	86,582	115,035	65,531	92,937	98,033	1,940,248
December:	Month	18,795,126	16,031,185	11,264,915	2,537,443	3,380,511	1,870,876	2,302,888	3,000,850	59,183,794
	Daily average	606,294	517,135	363,384	81,853	109,049	60,351	74,287	96,402	1,909,125
January:	Month	18,743,288	15,462,800	13,790,195	2,520,858	3,278,484	1,774,072	2,627,676	3,065,993	61,263,366
	Daily average	604,622	498,800	444,845	81,318	105,758	57,228	84,760	98,903	1,976,238
February:	Month	16,869,832	13,905,780	11,361,896	2,466,660	2,886,296	1,547,416	2,666,335	2,905,000	54,909,216
	Daily average	602,494	496,635	405,782	88,095	103,082	55,265	95,226	103,750	1,960,333
Total 12 months		225,422,512	181,045,707	139,753,274	30,223,338	47,343,262	20,853,514	39,361,227	38,157,243	772,160,037
Daily average		617,596	496,016	382,886	82,804	129,708	57,133	107,820	104,549	

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